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To the Members of the Kentucky State Medical Society:

The delay in publishing the volume of Transactions is due to the fact that members publishing papers in the medical journals failed to hand the Secretary duplicate copies for the Transactions, hence the papers could not be collected until after their appearance in the journals. This delay in future will be prevented by requesting, in advance of the annual meeting, that duplicate copies be prepared and handed the Secretary before the close of the last day's session. The volume can then be published and delivered to members within sixty days after the date of the annual meeting.

By order of the Committee of Publication.

STEELE BAILEY, M. D.,
Permanent Secretary.

TRANSACTIONS

OF THE

KENTUCKY STATE MEDICAL SOCIETY.

TRANSACTIONS

OF THE

Kentucky State Medical Society

NEW SERIES. VOL. I.

THIRTY-SEVENTH ANNUAL MEETING

HELD AT

LOUISVILLE, MAY 4, 5, AND 6, 1892

LOUISVILLE
PRINTED BY JOHN P. MORTON & COMPANY
1892

NOTE.

The Society is not responsible as a Society for the views enunciated by individual members in the papers and discussions published in this volume.

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KENTUCKY STATE MEDICAL SOCIETY

THIRTY-SEVENTH ANNUAL MEETING, HELD IN LOUISVILLE, KENTUCKY, MAY 4, 5, AND 6, 1892.

FIRST DAY—*Morning Session.*

The Society was called to order at 10:45 A. M. by the President, Dr. Hawkins Brown, of Hustonville.

Prayer was offered by the Rev. Charles Hemphill, D. D., of Louisville.

The first thing in order was the report of the Chairman of the Committee of Arrangements, Dr. A. M. Cartledge, of Louisville.

Dr. Cartledge said:

Mr. President, Gentlemen of the Kentucky State Medical Society:

On behalf of the Committee of Arrangements, composed of Drs. Vance, Cecil, Wathen, Stucky, Grant, and myself, I extend to you at this, the thirty-seventh annual meeting, a more than welcome to our city.

In the preparation for this meeting we have departed from some of the rules that have characterized many of the meetings heretofore. It has been the constant aim of the Committee of Arrangements, together with our very able Permanent Secretary, to make the scientific work of this meeting an especial feature, and how far we will succeed in this the meeting can only determine. Certainly, to glance at the programme and see the number of excellent papers we have, I think the meeting is full of promise in this direction. There are some especial features connected with the programme that belong to the Committee of Arrangements, and to these I shall call your attention.

After the President's address this evening at 8 o'clock, there will be what is generally known as a popular address, delivered by the Rev. C. J. K. Jones, of Louisville, entitled "My Doctor." The public are invited to attend. I think I am safe in saying that the address by Dr. Jones will be very entertaining and well worth your coming to hear it.

To-morrow (Thursday) evening at 9 o'clock the members of this Society will be tendered a reception at the Galt House by the local profession of Louisville. The members will secure tickets for that reception by applying any time to-day or to-morrow at the desk of the Secretary, these tickets to be presented at the door of the Galt House to-morrow evening. All members of the local profession who have taken an interest in this meeting are expected to attend, whether notified or not, and to bring their wives and daughters. Further attention to the programme falls within the province of the President, and I will turn it over to him. (Applause.)

The President then called for the report of the Treasurer, which was read by Dr. J. B. Kinnaird, of Lancaster, as follows:

Mr. President, Gentlemen of the Kentucky State Medical Society:

I am gratified to report that the treasury of the Society is in better condition to-day than it has been for many years. The increased membership has been an advantage financially. Greater interest is manifested by the members, and we hope the day will soon arrive when it will not be necessary to ask the delinquents to settle their dues, but it will be considered a privilege to contribute toward the great work that is being done by our Society.

Delinquents are notified that their names will be dropped from the roster unless they settle with the Treasurer. There exists a misapprehension in the minds of some members that they are not required to pay their dues unless in attendance. We would urge the members of the Society to settle promptly in order that there may be no trouble and delay in publishing the Transactions of the Society.

At the meeting at Lexington in May, 1891, it was resolved to resume the publication of the Transactions, the expense,

therefore, will be increased, and to meet the expenditures the dues were advanced to the original rate—$3 per annum.

Collections at Lexington meeting,	$405 00	
Dues from delinquents,	28 00	
		$433 00

Disbursed as follows:

Secretary's salary,	$100 00	
Secretary's incidentals,	17 75	
J. P. Morton & Co.,	34 95	
Stenographer,	43 40	
Printing proceedings,	43 00	
"Central Record" printing,	4 00	
Postage—Treasurer,	1 65	
		244 75
Balance in treasury,		$188 25

JAMES KINNAIRD,
Treasurer.

On motion the report was adopted.

Secretary Bailey read his report, as follows, which, on motion, was adopted and referred to the Committee on Publication:

Mr. President, Gentlemen of the Kentucky State Medical Society:

According to custom, your Secretary takes pleasure in presenting the Thirty-seventh Annual Report of this Society.

It is quite manifest that the medical profession of Kentucky is thoroughly modern in its medical ideas, and that it comes to the annual gatherings prepared for a vast amount of admirable work.

The year of grace 1892 will not be an exception. On this occasion the members have furnished material for a programme which is very attractive, and the peer in excellence and versatility of any furnished by sister State Medical Associations.

Progressive scientific investigation is being pursued all along the line, Fellows vieing with each other in the amount of hard work.

So far as the labor in this office is concerned, I may say it has been ample. The responsibility is great; there is required some ability and right much industry and tact; however, the work is fascinating; I like it, and trust its performance this season will compare favorably with other years.

I have been exercising every talent so as to carry into effect the resolution adopted at Lexington in May last, the spirit and letter of which is to resume the publication of the Annual Volume of Transactions.

As we have been lying fallow since 1877—in which year the Society deemed it prudent and wise to cease its publication and substitute for the Volume the printed Minutes, which have been distributed faithfully after each stated meeting—but are now up with the procession, marching to the music of progress, with which every State in the Union and the Territories are keeping step—your Secretary would submit the fact that we can not be indifferent to the contents of the Transactions; we must compare favorably with the very best. To afford the Committee of Publication, also, every assistance in getting the papers into print as early as possible, copies of papers should be submitted to the Secretary as soon as read, or shortly thereafter; in this way no delay will be had in the publication of the proceedings.

The resolution of Dr. McMurtry reads as follows:

"I move that a Committee on Publication be appointed at this meeting to restore the annual volume of Transactions, incorporating the reports and papers read and the discussions on the same, the latter to be revised by the authors preparatory to their publication. In order to meet the expense of the publication of the annual volume of Transactions it is necessary to raise the annual dues slightly. The matter of publishing the papers in the Transactions does not prevent authors from furnishing copies of their papers to reputable medical journals; but the original manuscript should be handed over to the Permanent Secretary as soon as read, or shortly thereafter."

Our membership, which now numbers 400, and the treasury upon a strong financial basis, will permit this innovation; besides, it puts us upon a plane with other State organizations and abreast of the times.

Another matter of moment, and one I hesitate to record, is that several members are in arrears for dues, which no amount of persuasion will induce them to remove. Graciously carrying them for years, and our efforts to get them to liquidate being unavailing, we will not longer violate Article IV, but drop them from the roll and underscore them on the ledger with red ink as "*delinquents*" having forfeited their membership for non-payment of dues.

I trust it will not be forgotten that after each member has received receipt for his dues that he will write his name and address legibly upon the Society Register, as in this way only can the Secretary complete the record of attendance, which he desires to print in the proceedings.

I would respectfully request, because of some confusion with the necrological list, that upon the death of a member the fact be at once communicated to the Secretary. The necessity of this is patent to every one.

A statement of my account is herewith appended: Expenditures, furnishing stamps, envelopes, postal cards, in fact the postage for Secretary's office during the current year, $14.75; paid expressage, books, Society Transactions, etc., $3.50; telegrams, $1.25; total, $19.50.

STEELE BAILEY, M. D.

Dr. J. N. McCormack, of Bowling Green, offered the following resolution:

Resolved, That a committee of five be appointed by the Chair to report to the next annual meeting a plan for organizing a medical society in each county in the State, as auxiliary to this Society, and so ordered that members of county societies as such shall become members of the State Society.

The resolution was adopted.

The President called attention to the resolution introduced by Dr. J. H. Letcher, of Henderson, last year, it being an amendment to the Constitution, Section 2, Article 4. (See page 10 printed minutes.)

Dr. John A. Larrabee, of Louisville, introduced the following resolution, but before doing so prefaced it with these remarks:

There are other things which may be accomplished by this Society. I allude to the influence, wisdom, and power of this Society which have been brought to bear upon matters of importance concerning the Nation as well as the State. Some seventeen years ago perhaps, in this place, it will be remem-

bered by you, Mr. President, and many others probably present, that while a bill was pending in the Congress of the United States, known as the Morrison bill for the reduction of quinine, the resolutions drafted and adopted by this Society were adopted by other State societies, and unanimously adopted by the American Medical Association, memorializing Congress upon that important question. I learned that we had no small weight in influencing the vote on that question.

WHEREAS, We recognize in the establishment of a National Bureau of Public Health a strong and efficient safeguard against the prevalence of epidemic diseases to which the laxity of our immigration laws renders the public liable; and

WHEREAS, A bill to create a Cabinet Officer of Public Health is now pending before the Congress of the United States; therefore be it

Resolved, That we, the members of the Kentucky State Medical Society, in convention assembled, do hereby heartily indorse the aforesaid bill, and do hereby request our Representatives in the Congress of the United States to use every legitimate means to secure its adoption.

Resolved, That a copy of these resolutions be printed and forwarded to our representatives in Congress as expressing the desires of their constituents.

Unanimously adopted.

The Committee on Credentials through its chairman, Dr. A. M. Vance, of Louisville, recommended a list of candidates for membership, all of whom were duly elected.[1]

The President appointed Dr. A. D. Price, of Harrodsburg, Chairman of the Nominating Committee.

On motion the Society adjourned until 2 P. M.

Afternoon Session.

The Society reassembled at 2 P. M., and was called to order by the President.

The first thing in order was the Report on Progress in Practical Medicine, which was read by Dr. William Bailey, of Louisville.

[1]See italicised names in roster.

The Report on the Progress of Surgery was read by Dr. A. M. Cartledge, of Louisville.

Dr. Arch Dixon, of Henderson, followed with the Report on Progress of Obstetrics.

Dr. W. W. Richmond, of Clinton, read the Report on Improvements in Materia Medica.

Discussed by Dr. E. R. Palmer, of Louisville.

The Report on Gynecology was read by Dr. David Barrow, of Lexington.

Discussed by Drs. Palmer, Wathen, McMurtry, and discussion closed by the essayist.

Dr. John A. Lewis, of Georgetown, read the Report on Diseases of the Rectum, which was discussed by Drs. Dugan, Mathews, and discussion closed by the essayist.

The Report on Genito-Urinary Surgery was read by Dr. E. R. Palmer, of Louisville, and discussed by Dr. H. H. Grant, of Louisville, and discussion closed by Dr. Palmer.

The Report on State Medicine was called for and passed. No report.

The Report on Medical Ethics was read by Dr. Isaac A. Sherley, of Winchester. No discussion.

Secretary Bailey read a telegram from the Ohio State Medical Society sending greetings.

On motion of Dr. Todd the Secretary was instructed to answer the same by telegraph.

The Report on Surgery of Bones was then read by Dr. R. C. McChord, of Lebanon.

Dr. Larrabee made an announcement in behalf of the Trustees of the Children's Free Hospital of Louisville, extending an invitation to the members of the Society to visit that institution to-morrow any time during the day, and the Ladies' Committee would be there to receive them.

The invitation, on motion, was accepted.

Dr. S. G. Dabney, of Louisville, then read the Report on

Ophthalmology, which was discussed by Dr. Larrabee, and discussion closed by the author of the report.

Dr. T. Hunt Stucky, of Louisville, read the Report on Laryngology.

Discussed by Dr. J. H. Letcher, of Henderson, and discussion closed by the essayist.

The Report on Otology was read by Dr. W. B. McClure, of Lexington.

On motion of Dr. Letcher the Society adjourned until 8 P. M.

Evening Session.

The Society reassembled at 8 P. M., and was called to order by the First-Vice President, Dr. B. L. Coleman, of Lexington, who introduced President Brown.

The President then delivered his annual address, which was punctuated here and there with applause.

President Brown was followed by Rev. C. J. K. Jones, of Louisville, who delivered an address entitled "My Doctor."

The address was listened to with marked attention, and it was very entertaining and humorous. At the close of his remarks, Dr. Jones, on motion of Dr. Todd, of Lexington, was extended a vote of thanks for his admirable address.

There being no further business, the Society adjourned to meet Thursday at 9 A. M.

SECOND DAY—*Morning Session.*

The Society met at 9 A. M., and was called to order by the President.

The first thing in order was the transaction of miscellaneous business.

Secretary Bailey read a communication from the Secretary of the Institution for the Education of the Blind, Louisville, inviting the members to visit it.

On motion the invitation was accepted with thanks.

The President appointed as a committee on the resolution of Dr. McCormack, introduced yesterday, Drs. J. N. McCormack, chairman, J. B. Kinnaird, H. K. Adamson, John A. Lewis, and W. W. Richmond.

At this juncture Dr. Lyman Beecher Todd, of Lexington, arose and said:

Mr. President, and Gentlemen of the Kentucky State Medical Society: As I was leaving my home in Lexington, on yesterday morning, I met upon the streets one of the venerable heroes of our Society, one of the charter members of this body, one of its original members, learned, able, and useful through a long and eventful life of study and of learning. Now, at the venerable age of eighty-four, riding daily from his country home eight miles in our county, he holds the important position of an assistant and Emeritus Professor of Science and Chemistry at the State College of Kentucky, Lexington. I refer to Dr. Robert Peter, of Lexington. (Applause.) There are gentlemen in this hall who are his worthy successors, as he is the only surviving member of the original faculty of the Kentucky School of Medicine, located in this beautiful and hospitable city. He requested me, Mr. President, to present to you, and through you to the members of this Society, his warmest salutations, wishing you all individually long lives, prosperity, and happiness, and a long life to both the Kentucky School of Medicine and the Medical Society of the State of Kentucky. You all know him by his face, form, vigor, and by reputation. (Loud applause.)

Dr. W. H. Wathen, of Louisville, then said:

Mr. President, the salutations of the venerable and eminent Professor Dr. Robert Peter, of Lexington, having been presented to this Society by Dr. Lyman Beecher Todd, therefore be it

Resolved, That the Kentucky State Medical Society in thirty-seventh annual meeting assembled in the city of Louisville, May 5, 1892, express to Professor Robert Peter, of Lexington, who is one of the charter members of this Society and

who is the only survivor of the original faculty of the Kentucky School of Medicine of this city, our highest appreciation of his life-long and distinguished labors in the cause of science and humanity, and wish him yet many years of happiness, usefulness, and prosperity.

The resolution was seconded, and unanimously adopted by a rising vote.

The President appointed Dr. Todd a committee of one to convey the spirit of the resolution to Dr. Peter.

Dr. J. H. Letcher, of Henderson, called the attention of the Society to the fact that the resolution offered by him at Henderson two years ago, and carried almost unanimously at Lexington last year, needed some slight alteration. It was offered in the best of faith and for the best interests of the Society, but he thought it had been abused at the present meeting. He therefore desired to amend the resolution so as to read thus:

Resolved, That each officer shall be elected after recommendation by the Nominating Committee, which committee shall be made as follows: Immediately after the close of the first session of the Society of the second day, at each annual meeting, members present shall organize themselves into eleven conventions, according to the Congressional districts, all members present from the First Congressional District constituting one convention, and so on for the eleven districts, each convention to elect one member of the Nominating Committee, except the convention of Fifth Congressional District (in which is situated the city of Louisville), which shall elect two members. The chairman of each convention to report their members at the next session, the President then to appoint the thirteenth, he to be chairman of the committee. The election shall take place at the same annual meeting of the Society on the second day of the session, after reading the proceedings of the previous day, and each officer shall serve for one year, or until another is elected to succeed him.

On motion the amendment was adopted.

Dr. Lyman Beecher Todd, of Lexington, then read the Report on Necrology.

Dr. J. N. McCormack offered the following resolution:

Resolved, That the Kentucky State Medical Society warmly indorses the American Medical College Association in its efforts for a higher and more thorough system of education in the medical colleges throughout this country, including better preliminary education before matriculation, and attendance upon a three-years' course of lectures as a requirement for graduation, and the Society pledges its support to our own schools in their efforts to forward this movement.

Dr. Wathen said that, on behalf of the medical institutions of Louisville, he was pleased to second the resolution; that the Secretary of the State Board of Health of Kentucky had done much to dignify medical education and medical practice, and to elevate the standard of requirements of medical colleges. The medical colleges of Louisville were in accord with the views expressed in the resolution.

The resolution was further discussed by Drs. McCormack and Pinckney Thompson, and then adopted.

Dr. A. D. Price, Chairman of the Nominating Committee, made the following report:

President—Dr. Arch Dixon, Henderson.
First Vice-President—Dr. T. B. Greenley, Orel.
Second Vice-President—Dr. Turner Anderson, Louisville.
Treasurer—Dr. J. B. Kinnaird, Lancaster.
Permanent Secretary—Dr. Steele Bailey, Stanford.
Board of Censors—Drs. B. W. Stone, Hopkinsville, W. L. Rodman, Louisville, and J. Smith, Hodgenville.

Place of Meeting—Frankfort; time, second Wednesday in May, 1893.
Chairman of Committee of Arrangements—Dr. E. E. Hume.

The report of the committee was adopted.

The President-elect, being escorted to the chair, said:

Mr. President and Gentlemen of the Kentucky State Medical Society, there is not a man in the medical profession in Kentucky that would not feel proud of being elected to preside over the deliberations of this body. I am profoundly grateful for the honor you have conferred upon me, and I pledge myself to promote the interests of the Society.

The Report on Otology was then read by Dr. W. B. McClure, of Lexington.

Discussed by Drs. Coomes, Dabney, and discussion closed by the essayist.

Dr. W. H. Wathen followed with the Report on Abdominal and Pelvic Surgery.

Discussed by Dr. Greenley, and discussion closed by Dr. Wathen.

Dr. J. H. Letcher, of Henderson, read a paper entitled "Importance and Time of Restoring the Lacerated Perineum" in lieu of his Report on Intestinal Anastomosis.

The Report on Relation of Chemistry to the Practice of Medicine was called for. No report.

Dr. T. B. Greenley, of Orel, followed with the Report on Vital Statistics.

Dr. J. A. Ouchterlony, of Louisville, read a paper entitled "Some Observations on Influenza."

It was moved that the paper of Dr. J. W. Irwin, of Louisville, on "Some Sequelæ of Influenza," be read and the two papers be discussed jointly. Carried.

Dr. Irwin then read his paper, which was followed by a discussion, participated in by Drs. Greenley, Marshall, and discussion closed by the essayists.

A paper entitled "A Typical Case of Rapid Dilatation of the Os Uteri," by Dr. J. G. Carpenter, of Stanford, was read by Secretary Bailey.

On motion the Society adjourned till 2 P. M.

Afternoon Session.

The Society reassembled at 3 P. M., and was called to order by the first Vice-President, Dr. Coleman.

Dr. J. F. Purdom, of Louisville, read a paper entitled "Dysentery, its Etiology, Pathology, and Treatment."

Dr. William L. Rodman, of Louisville, read a paper on "Tumors of the Neck."

Dr. William R. Blue, of Louisville, read a paper on "Electric Illumination of the Bladder."

Dr. Ewing Marshall, of Louisville, followed with a paper on "Cardiac Mechanism."

Discussed by Dr. Smith, of Louisville.

Dr. Louis Frank, of Louisville, read a paper entitled "Clinical Bacteriology," which was discussed by Drs. Marvin, Larrabee, and others, and discussion closed by the author of the paper.

Dr. C. Skinner, of Louisville, reported a case of Vesico-Vaginal Fistula.

Dr. Dudley S. Reynolds, of Louisville, read a paper on "The Treatment of Burns of the Eye."

Dr. G. Frank Lydston, of Chicago, read a paper entitled "A Case of Circinate Syphilide with Psoriasis Palmaris Syphilitica."

The author presented some beautiful original water-color drawings of the lesions in the case.

Dr. Charles W. Aitkin, of Flemingsburg, read a paper entitled "The Treatment of Diphtheria."

Secretary Bailey read a telegram from the Secretary of the Kansas State Medical Society extending greetings.

On motion he was instructed to send a response.

Dr. Lyman Beecher Todd, of Lexington, read a paper on "Preventive Medicine Respecting Constipation."

Dr. M. T. Scott, of Lexington, contributed a paper on "The Surgical Treatment of Suppurative Hepatitis."

Dr. D. H. Kellar, of Louisville, read a paper entitled "Internal Congestion and the Effect of Calomel upon it."

Dr. L. S. McMurtry, of Louisville, moved that Dr. Ouchterlony be paid $35, the amount which he paid for the Society to a stenographer two years ago for reporting the proceedings of the Society. Motion seconded and carried.

On motion the Society adjourned to meet Friday, 9 A. M.

RECEPTION AND BANQUET.

Thursday evening the Society was royally entertained at the Galt House by the Louisville profession. The large and small parlors were thrown open and the visitors were received by the local physicians and their wives. The entertainment was a thorough success. A band consisting of twenty pieces furnished the music. The dining-room was thrown open at 10 o'clock, and as soon as it was comfortably filled the doors were closed, and were not opened again until all had finished. The supper was served in three courses, with champagne with each course. After supper those who cared to do so danced.

THIRD DAY—*Morning Session.*

The Society met at 9:30 A. M., and was called to order by the President.

Dr. Samuel E. Milliken, delegate from the New York State Medical Association, was accorded the privileges of the floor.

Dr. H. K. Adamson, of Maysville, offered the following resolution, which was seconded and adopted:

Resolved, That the Kentucky State Medical Society heartily indorses the efforts of the State Board of Health to enforce the laws regulating the practice of medicine in this State, and to rid the people of the evils of charlatanism.

Dr. W. L. Rodman, of Louisville, offered the following resolution, which was seconded and adopted:

Resolved, That the Kentucky State Medical Society being deeply in sympathy with the movement to erect a monument in memory of Dr. Samuel D. Gross, we do hereby most earnestly recommend that every physician in this State contribute such sum or sums of money as to them may seem best, and that such contribution be sent, at as early a date as possible to Dr. D. W. Yandell, of Louisville, or John B. Roberts, of Philadelphia.

The President appointed Dr. Rodman a special committee to solicit subscriptions.

Dr. W. F. Boggess, of Louisville, stated that he desired to read his paper on "Some Remarks Concerning a New Remedy" by title, which he did.

Secretary Bailey read the following resolution, which was seconded by Dr. Larrabee and adopted:

WHEREAS, A movement has been inaugurated by the American Medical Association to unify the medical profession of the Western Hemisphere by the organization of the Pan-American Medical Congress, to be held in the city of Washington in September, 1893; therefore,

Resolved, That the Kentucky State Medical Society hereby cordially approves of the objects and purposes of said Pan-American Medical Congress, and recommends that the members of this Society and the profession of Kentucky render all practicable support to the said Congress.

Resolved, That the President of the Kentucky State Medical Society be and he is hereby instructed to appoint a committee of three members to co-operate with the Committee on Permanent Organization of the Pan-American Medical Congress.

The President appointed on this committee, Dr. L. S. McMurtry, chairman, Dr. David Barrow, and Dr. J. G. Brooks.

Dr. J. O. Jenkins, of Newport, then read a paper entitled "Remarks on Diabetes Mellitus."

Discussed by Dr. Larrabee, and discussion closed by the essayist.

Dr. R. Craig Falconer, of Lexington, followed with a paper on "Double Synchronous Amputation, with Report of Cases."

Dr. J. B. Marvin, of Louisville, contributed a paper entitled "Some Diseases of the Spinal Cord, with reports of Autopsies, and Exhibition of Specimens."

Dr. H. H. Grant, of Louisville, read a paper entitled "Amputation of the Breast for Malignant Disease."

Discussed by Dr. Rodman.

Dr. Ouchterlony, Chairman of the Committee on the Marvin Prize Essay, stated that he was the only member that had read the theses, and reported in favor of awarding the prize to a contestant under the *nom de plume* of "Medicus."

Dr. Woody, a member of the committee, asked that the report be deferred until next year, as he had been so extremely busy professionally that he had not time to read it.

Dr. Ouchterlony said that the Society could not with consistency refuse to give the prize after the contestants had spent hours and days on the preparation of their theses. He then asked the privilege of paying the prize money himself.

The President refused to entertain this request.

Dr. Skinner moved that a member of the Society be appointed to serve on the committee in the absence of Dr. Dixon, and that the report be made some time during the session. The motion was seconded, and, after a spirited discussion participated in by Drs. Ouchterlony, Woody, Todd, Skinner, Boggess, and others, was carried.

The Chair appointed Dr. William Bailey, of Louisville.

Dr. W. E. Sleet, of Midway, read a paper entitled "Supernumerary Breasts in the Female."

Dr. J. B. Taulbee, of Mt. Sterling, followed with a paper entitled "How should We Act Personally and Professionally toward the Homeopathic Physician?"

On motion the paper was referred to the Committee on Publication without discussion.

Dr. W. B. Meany, of Louisville, read a paper entitled "Some Observations on Squint."

On motion the Society adjourned till 2 P. M.

Afternoon Session.

The Society reassembled at 2 P. M., and was called to order by President Brown.

Dr. J. F. Prewitt, of West Point, read a paper entitled "Report of a Case of Urinary Fistula, the Result of Stricture of the Urethra."

The following papers were read by title and referred to the Committee on Publication:

1. "Recent Treatment of Granular Lids," by Dr. William Cheatham, of Louisville.
2. "Treatment of Ununited Fractures," by Dr. W. O. Roberts, of Louisville.
3. "The present Status of Brain Surgery," by Dr. Fayette Dunlap, of Danville.
4. "Trachoma," by P. Richard Taylor, of Louisville.
5. "Chronic Inflammation of the Middle Ear," by Dr. A. H. Kelch, of Louisville.
6. "Report of Forty-five Cases of Cataract Extraction—Remarks," by Dr. J. M. Ray, of Louisville.
7. "Cocaine as a Therapeutic Agent and Local Anesthetic," by Dr. J. B. Taulbee, of Mt. Sterling.
8. "On Anesthesia with Ether, Being Deductions from a Personal Experience of over Five Hundred Cases," by James W. Guest, M. D., of Louisville.

9. "Ergot in Labor and Abortion," by Dr. F. M. Green, of Greendale.

10. "Every-Day Therapeutics," by Dr. John Ford Barbour, of Louisville.

11. "Report of a Case of External Urethrotomy for Stricture of the Urethra without a Guide," by Dr. J. V. Carrick, of Lexington.

12. "Surgical Treatment of General Septic Peritonitis," by Dr. J. C. Carrick of Lexington.

13. "A Case of Hernia of the Iris," by Dr. J. G. Carpenter, of Stanford.

14. "Two Cases from Practice," by Dr. R. C. McChord, of Lebanon.

15. "A case of Dupuytren's Contraction," by Dr. Steele Bailey, of Stanford.

Dr. Ouchterlony made the report of the Committee on Prize Essay, stating that it was the unanimous opinion of the Committee that the essay of Dr. Simon Flexner, of Louisville, was the most meritorious and deserved the prize, and the Committee therefore had awarded it to him.

On motion the report of the Committee was accepted and adopted.

A motion was then made that the essay be read by Dr. Ouchterlony, which was done.

Discussed by Drs. Robinson and Weidner.

Dr. L. S. McMurtry, of Louisville, offered the following:

Resolved, That the Constitution be so changed as to abolish all standing committees, and that in lieu thereof the Chair, at the next meeting, appoint a committee to select and arrange papers on medical, surgical, obstetrical, and gynecological subjects, and also gentlemen to lead in the discussions on the various papers presented. The resolution was seconded by Dr. Vance. (To lie over for one year.)

The Secretary read the following list of appointments

of committees as made by the President for the ensuing year:

Report on Practical Medicine—H. M. Skillman, Lexington.
Report on Obstetrics—Thomas S. Bullock, Louisville.
Report on Gynecology—John G. Cecil, Louisville.
Report on Progress of Surgery—M. T. Scott, Lexington.
Report on Tumors—W. L. Rodman, Louisville.
The Dangers of Anesthesia and How to Avoid Them—Frank C. Wilson, Louisville.
Genito-Urinary Surgery—W. R. Blue, Louisville.
Diseases of the Rectum—W. O. Green, Louisville.
Materia Medica—George M. Reddish, Somerset.
Diseases of the Mind and Nervous System—Curran Pope, Louisville.
Laryngology—A. L. Butt, Franklin.
Dermatology—H. K. Adamson, Maysville.
Brain Surgery—H. P. Cartwright, Bowling Green.
Ophthalmology—John Y. Oldham, Lexington.
Otology—T. E. Evans, Louisville.
Epidemics—A. D. Price, Harrodsburg.
Vital Statistics—T. B. Greenley, Orel.
Diseases of Children—John A. Larrabee, Louisville.
Cholera Infantum—Lyman Beecher Todd, Lexington.
Medical Ethics—H. J. Cowan, Danville.
Bacteriology—Louis Frank, Louisville.
Committee on Publication—L. S. McMurtry, chairman, John G. Cecil, John A. Larrabee, and J. B. Marvin.
Abdominal and Pelvic Surgery—W. C. Dugan, Louisville.

The Secretary then read the list of delegates to the American Medical Association, as follows:

M. Bagby,	D. S. Reynolds,	J. M. Mathews,
F. W. Samuel,	Wm. Bailey,	W. E. Irvine,
J. M. Bodine,	Arch Dixon,	W. L. Rodman,
J. M. Ray,	Pinckney Thompson,	W. H. Wathen,
J. G. Cecil,	A. M. Cartledge,	S. W. Holloway,
T. B. Greenley,	J. N. Baughman,	J. G. Brooks,
C. W. Kelly,	L. S. McMurtry,	W. B. Meany,
M. P. Creel,	H. Brown.	

Dr. Lyman Beecher Todd, of Lexington, offered the following, which was unanimously adopted:

Resolved, That the thanks of the Kentucky State Medical Society, in thirty-seventh annual session assembled in Louisville, are hereby tendered to the press of the city of Louisville; to the various railroads for reduced fares; to the courteous and efficient Committee of Arrangements, who have contributed to the convenience and comfort of an unusually large number of members in attendance upon this meeting; to the ladies who arranged and entertained us so handsomely at the delightful reception at the Galt House on Thursday evening; to the physicians of Louisville for their very kind and effusive hospitality—all of which have rendered the meeting of the Society in Louisville profitable, pleasant, and memorable.

There being no further business, the Society on motion adjourned to meet at Frankfort on the second Wednesday in May, 1893.

STEELE BAILEY, M. D.,
Permanent Secretary.

ROSTER.

The italicised names are those of members elected in 1892.

Adamson, H. K., Maysville.
Aitken, C. W., Sherburne.
Alcorn, Edward, Hustonville.
Anderson, Turner, Louisville.
Alexander, H. N., Paris.
Aud, C. Z., Cecilian.
Allen, T. S., Winchester.
Allen, Seth, Somerset.
Atkins, Henry S., Russell Cave.
Agnew, P. L., Sebree.
Anderson, S. J., Harrodsburg.
Allen, S. S., Lexington.
Alexander, S. C., Owensville.
Atkins, W. L., Lexington.
Alexander, John B., Mason.
Allan, B. A., Louisville.
Austin, Curtis A., Flagfort.
Beeler, Geo. W., Clinton.
Brown, H., Hustonville.
Brown, W. A., Parkville.
Brown, John Young, Lakeland.
Brooks, J. G., Paducah.
Bloom, I. N., Louisville.
Bailey, William, Louisville.
Bailey, Steele, Stanford.
Baker, J. M., Shelbyville.
Butt, A. L., Franklin.
Blair, B. H., Cupio.
Bullock, T. S., Louisville.
Blanford, F. T., St. Marys.
Burnett, Theodore L., Louisville.
Bogle, John C., Danville.
Barrow, David, Lexington.
Bright, Hardin W., Richmond.
Barbour, John Ford, Louisville.
Betchel, John T., Poole's Mills.
Book, Hampton D., Robards.
Blanding, Abraham L., Walnut Hills.
Black, James M., Red House.
Becket, J. B., Powersville.
Bryan, Joseph, Lexington.
Baughman, J. N., Flat Lick.
Bullock, W. O., Lexington.
Boggess, Walter F., Louisville.
Brown, Joseph Thomas, Clintonville.
Butler, Thomas L., Louisville.
Bosworth, Lewis N., Lexington.
Bagby, D. M., Walton.
Bodine, J. M., Louisville.
Boyd, Frank, Paducah.
Blaine, A. D., Dry Ridge.
Bowen, D. C., Nolin.
Blue, W. R., Louisville.
Cheatham, William, Louisville.
Cartledge, A. M., Louisville.
Clarke, F. H., Lexington.
Coomes, M. F., Louisville.
Cottell, H. A., Louisville.
Cartwright, H. L., Shelby City.
Cleaver, W. W., Lebanon.
Cecil, John G., Louisville.
Coleman, B. L., Lexington.
Carpenter, J. G., Stanford.
Combs, Glenmore, Hedges.
Creel, M. P., Central City.
Cowan, Harry J., Danville.
Coleman, J. B., Murray.
Caldwell, J. Edwin, Perryville.
Cottingham, Isham, Cairo.
Coleman, J. S., Falls of Elkhorn.
Coleman, W. W., Mt. Washington.
Curry, G. M., Owingsville.
Caldwell, W. Hampton, Lexington.
Cottingham, Levin, Robards.
Chenoweth, Jas. Shreve, Louisville.
Chipman, N. B., Falmouth.

Cullen, Gilbert Isham, Cincinnati.
Chapman, W. Carroll, Louisville.
Colyer, J. Rufus, Somerset.
Coombs, Samuel W., Bowling Green.
Collins, Moses, Lakeland.
Coons, Llewellyn, Muir.
Carrick, J. C., Lexington.
Cassell, John B., Burgin.
Coons, T. C., Chilesburg.
Coffman, W. H., Georgetown.
Carr, Willis H., Claysville.
Cherry, A. T., Caneyville.
Cochran, Sam, Louisville.
Cartwright, H.P., Bowling Green.
Dismukes, W. L., Paducah.
Durrett, W. T., Louisville.
Dunlap, Fayette, Danville.
Duncan, E. M., Eddyville.
Dixon, Archibald, Henderson.
Dabney, S. G., Louisville.
Daugherty, Thomas H., Sadieville.
Davis, Geo. Edwin, Salvisa.
Davis, J. D., Bethel.
Dean, E. R., Judy.
Dixon, Jr., Archibald, Henderson.
Dunn, Louis, Corinth.
Duerson, Charles B., Mt. Sterling.
Davis, W. M., Louisville.
Doherty, W. B., Louisville.
Dunn, M. C., Henderson.
Dugan, W. C., Louisville.
Evans, J. B., Riley's Station.
Evans, George W., Richmond.
Elliott, C. A., Paducah.
Evans, W. R., Danville.
Eager, Benjamin F., Hopkinsville.
Edwards, Charles L., Sebree.
Evans, Thomas A., Louisville.
Evans, Silas, Lexington.
Flannagen, John T., Powers' Store.
Finck, T. D., Louisville.
Floyd, William, Mannville.
Foster, John M., Richmond.
Farris, Alex. A., Hickman.
Flexner, Simon, Louisville.
Frank, Louis, Louisville.
Falconer, Richard Craig, Lexington.
Fallis, R. G., Louisville.
Ferguson, R. V., Haydonville.
Greenley, T. B., West Point.
Griffiths, Patton, Louisville.
Grant, H. H., Louisville.
Gilbert, J. W., Lawrenceburg.
Gaines, R. W., Hopkinsville.
Green, F. D., Bloomfield.
Grimes, G. W., Little Rock.
Grimes, J. A., Austerlitz.
Griswold, A. V., Louisville.
Grant, W. E., Louisville.
Griffin, P. H., Henderson.
Green, Jr., Edward M., Danville.
Gudgell, Frank P., Owingsville.
Green, Walter O., Louisville.
Green, F. M., Greendale.
Gilbert, J. D., Hurt.
Given, Lamme S., Cynthiana.
Garner, William F., Humphrey.
Goodloe, D. S., Lexington.
Goodman, Henry M., Louisville.
Garr, C. R., Flemingsburg.
Griffiths, Geo. W., Louisville.
Griffiths, W. M., Louisville.
Grant, J. W., Petersburg.
Gibson, H. R., Richmond.
Groves, Chas. J., Buecharl.
Guest, J. W., Louisville.
Gilbert, R. B., Louisville.
Holloway, J. W., Keene.
Hanna, W. M., Henderson.
Harwood, J. M., Shelbyville.
Hickey, C. W., Flemingsburg.
Hays, T. A., Fairmount.
Hodge, J. A., Henderson.
Hopson, Joseph, St. Matthews.
Hart, H. C., Winchester.
Hayden, R. H., Grassy Lick.
Herring, Henry C., Lancaster.
Helm, S. L., Spears.
Howe, James Lewis, Louisville.
Harris, Giles, Speedwell.
Henderson, James A., Richmond.
Hume, E. E., Frankfort.

Harris, John W., Union City.
Handley, Edward, Sturgis.
Hamner, Joseph, Spring Grove.
Holloway, Uriah G., Troy.
Henderson, Peyton R., Louisville.
Holsclaw, John R., Zoneton.
Hower, T. J., Cooper.
Harrod, F. L., Harrodsburg.
Holley, James T., Middlesborough.
Hobson, W. H., Harrod's Creek.
Hayes, John E., Louisville.
Harvey, C. W., Louisville.
Herndon, B. F., Barboursville.
Holloway, Sam. W., Louisville.
Heuser, Henry, Louisville.
Hertzsch, Della, Louisville,
Ingram, Julia C., Louisville.
Irwin, J. W., Louisville.
Irvine, W. E., South Carrollton.
Johnson, D., West Point.
Johnston, J. W., Winchester.
Johnson, B. T., Winchester.
Jones, H. L., Henderson.
Jamison, W. A., Eminence.
James, Samuel E., Frankfort.
Jennings, William, Richmond.
Jenkins, J. O., Newport.
Jackson, A. W. Earlington.
Judy, Garrett, Bethel.
Juett, David P., Blandville.
Johnson, Calvin R.. Waddy.
Johnson, J. E., Zion.
Keen, William C., Albany.
Kenyon, F. P., Middlesborough.
Kincaid, J. W., Catlettsburg.
Kincaid, J. D., Catlettsburg.
Knott, L. D., Lebanon.
Kelly, Edward, Lebanon.
Kelch, Allen H., Louisville.
Kinnaird, J. B., Lancaster.
Keller, David Henry, Lexington.
Kinnaird, Thomas H., Lexington.
Kenner, Robert C., Louisville.
Kash, Oliver S., Moorefield.
Kaelin, F., Louisville.
Kirk, W. R., Louisville.
Kelly, C. W., Louisville.
Kennedy, O. A., Richmond.
Letcher, J. H., Henderson.
Lovell, A. G., Mt. Vernon.
Larrabee, J. A., Louisville.
Laurence, Anna F., Louisville.
Leaming, S. E., Stanton.
Luckett, E. H., Owensboro.
Lieber, A. J., Henderson.
Lucas, Charles G., Louisville.
Letcher, Benjamin, Henderson.
Lowry, John C., Troy.
Leathers, Charles A., Lawrenceburg.
Leak, J. K., New Haven.
Lewis, Harry H., Louisville.
Lewis, John A., Georgetown.
McChord, R. C., Lebanon.
McMurtry, L. S., Louisville.
Marvin, J. B., Louisville.
Moore, J. S., New Hope.
Mathews, J. M., Louisville.
McKinley, J. H., Winchester.
Morrison, A. M., Goshen.
Mann, Charles M., Nicholasville.
McCormack, J. N., Bowling Green.
McClure, W. B., Lexington.
McDowell, Harvey, Cynthiana.
Milliken, W. B., Rockfield.
Murrell, D. G., Paducah.
Mason, W. M., Murray.
Mott, J. W., Fulton.
Morris, N. G., Fulton.
Meredith, Thomas O., Burgin.
McMurray, T. J., Lawrenceburg.
Meek, J. M., Morgan.
Marshall, Ewing, Louisville.
Martin, W. M., Kingston.
Martin, Joseph, Poindexter.
Mansfield, Cassius Dudley, Stanton.
McDowell, Lucien, Flemingsburg.
Meek, Harrison Davis, Claysville.
Moss, Virgil U., Rockfield.
Metcalfe, John H., Louisville.
Maddox, J. D., Rockport.
Miles, Abraham M., Havvieland.
Meany, W. B., Louisville.

McDowell, James L., Central City.
Meunch, Albert, Louisville.
McDonough, J. N., Louisville.
Muen, Albert.
Norment, Henry T., Anthoston.
Neet, John D., Versailles.
Nunnelly, Henry C., Ford.
O'Neal, W. S., Lancaster.
Ouchterlony, John A., Louisville.
Orendorf, Henry, Louisville.
Oldham, John Y., Lexington.
Orr, Alexander, Demossville.
Owens, Joseph L., Somerset.
O'Conner, J. W., Elizabethtown.
Prewitt, James V., West Point.
Price, Ancil D., Harrodsburg.
Pusey, H. M., Louisville.
Palmer, E. R., Louisville.
Plummer, H., Harrodsburg.
Pryor, J. W., Lexington.
Purdom, J. F., Mitchellsburg.
Pigg, W. B., Berea.
Poyntz, James M., Richmond.
Pettus, J. D., Crab Orchard.
Price, Joseph L., Sherman.
Pack, John E., Georgetown.
Perkins, George, Somerset.
Parker, J. W. F., Somerset.
Pindar, L. O., Cynthiana.
Patterson, Thos. L., Lexington.
Price, J. C. S., Poplar Plains.
Phillips, William E., Wyoming.
Pusey, Henry K., Louisville.
Pelle, H. E., Louisville.
Pope, Clarence T., Louisville.
Pitman, Harvey L., East Bernstadt.
Pope, Curran, Louisville.
Parker, J. H., Corbin.
Pennington, J. R., Louisville.
Pierce, E. L., Louisville.
Peck, D. D., Helena.
Powell, J. N., Corydon.
Pusey, D. C., Brandenburg.
Reynolds, Dudley S., Louisville.
Roberts, W. O., Louisville.
Richmond, W. W., Clinton.
Riley, F. F., Anchorage.
Rodman, W. E., Hodgenville.
Rodman, W. L., Louisville.
Ray, J. M., Louisville.
Reid, H., Stanford.
Rankin, H. C., Berry.
Robertson, D. D., Calhoun.
Roby, Thomas A., Paris.
Ross, William P., Madisonville.
Ramsey, R. T., London.
Robinson, James Owen, Bridgeport.
Roberts, Harvey H., Paris.
Reddish, George M., Somerset.
Reynolds, O. H., Bagdad.
Robertson, A. L., Sherburne.
Ritter, H. B., Louisville.
Reddick, James F., Paducah.
Robertson, J. D., Paducah.
Stuart, Robert, Zion.
Swope, Samuel D., Marion.
Shelton, E. B., Blandville.
Sleet, William E., Midway.
Shirley, Isaac A., Winchester.
Shirley, J. A., Grassy Lick.
Scott, Preston B., Louisville.
Stucky, T. H., Louisville.
Stucky, J. A., Lexington.
Stewart, J. Q. A., Frankfort.
Seargent, Andrew, Hopkinsville.
Scott, Matthew T., Lexington.
Skillman, H. M., Lexington.
Scribner, E. B., Louisville.
Stone, B. W., Hopkinsville.
Skinner, C., Louisville.
Smith, A. Wilkes, Richmond.
Snowden, J. A., Right Angle.
Simpson, James, Winchester.
Simpson, F. C., Louisville.
Stewart, J. T., Berry.
Sweitzer, H., Payne's Depot.
Scott, W. F., Somerset.
Smith, Jerome, Hammondsville.
Scott, Lewis M., Frankfort.
Stewart, P. H., Paducah.
Simmons, Nathan R., Kirklevington.
Stone, John N., Berry.

Stedman, Samuel M., Lexington.
Simpson, Geo. T., Louisville.
Schrachner, Aug., Louisville.
Smith, D. T., Louisville.
Strickler, F. P., Elizabethtown.
Samuel, F. W., Louisville.
Simons, A. A., Cloverport.
Selby, J. T., Elizabethtown.
Smith, E. S., Hodgenville.
Sheley, P. A., Louisville.
Shuck, J. H., Louisville.
Todd, Charles H., Owensboro.
Todd, Oren D., Eminence.
Thomas, J. P., Pembroke.
Thompson, Pinckney, Henderson.
Townsend, T. J., Shocoh.
Taylor, J. Q., South Union.
Taylor, J. L., Greencastle.
Todd, L. Beecher, Lexington.
Townsend, R. P., Adairville.
Tucker, D. C., Danville.
Taulbee, J. B., Mt. Sterling.
Taylor, T. J., Richmond.
Tuley, Henry E., Louisville.
Taylor, Philip Richard, Louisville.
Townsend, Oliver L., Orr.
Thornton, G. G., Gravel Switch.
Trapp, Charles W., Lexington.
Trise, D. M., Middlesborough.
Usher, T. M., Fulton.
Underwood, W. L., Cropper.
Vance, Ap Morgan, Louisville.
Violette, J. D., Williamstown.
Vaught, Clarence H., Richmond.
Vice, Thomas Bryam, Sherburne.
Weis, T. W., Peach Orchard.
Walton, C. J., Louisville.
Wagner, L. C., Nicholasville.
Wathen, W. H., Louisville.
Wilson, F. C., Louisville.
Wade, J. H., Ashland.
Webb, William C., Bryantsville.
Willis, R. L., Lexington.
Willis, Sam W., Pine Grove.
Willis, T. A., Finchville.
Wiley, E. M., Harrodsburg.
Woody, Sam E., Louisville.
Woods, R. T., Paris.
Wesley, J. T., Middleburg.
Williams, Urbane V., Frankfort.
Wallingford, Alex. M., Mt. Carmel.
Warren, Isaac, Somerset.
Warner, Geo. M., Louisville.
Weidner, C., Louisville.
Wesley, Cyrus, Newell.
Yager, F. J., Campbellsburg.
Young, F. O., Lexington.
Yandell, David W., Louisville.
Yeager, W. H.. Louisville.
Zeller, Benjamin F., Crab Orchard.

THE USE AND ABUSE OF MEDICINES.

By H. Brown, M. D.
Hustonville, Ky.

Neither propriety nor my own inclination, nor perhaps your patience, would permit me on this occasion to attempt a formal and elaborate essay.

Instead, I shall employ the brief time which custom allots me in submitting to you some practical observations on the use and abuse of medicines on the part both of our profession and of the general public.

I desire, however, not to be misunderstood. While inveighing against the use of drugs I hope I shall not be supposed so recreant to the profession, or so affected with the skepticism of some modern schools as to doubt, if not actually to deny, the benefit to be obtained from their proper use in the treatment of disease. I should stultify myself, for instance, if I doubted or decried the great utility of blood-letting, general or local, of mercury in the treatment of various forms of inflammation, of quinine in intermittent diseases, of the preparations of iron in anemia, or arsenic in cutaneous affections, and of opium, iodine, and colchicum in other special conditions.

Earnestly deprecating as I do the reckless abuse of medicines, I have no word to utter against the active and ener-

getic use of them when the gravity of the disease legitimately requires such method.

The Latin aphorism, "*In medio tutissimus ibis*," points us to the safer and better course, which is the middle one.

From the violent treatment of the heroic school of thirty or forty years ago, from blood-letting and counter-irritation in their severest forms, and almost without discrimination, and from the almost universal use of drastic purgatives and hydrogogue cathartics, it is certainly not the part of wisdom to fly to the other extreme and discard wholly these effective and important measures, or lapse into the imbecility of treatment which is becoming characteristic of one wing of our profession. From such violent methods, indiscriminately employed, a reaction was inevitable. It came, and, after the fashion of reactions, it has gone in some quarters entirely too far. "The pendulum has swung to the other extreme."

This tendency has no doubt been aided by a change which has taken place in the type of disease. It is quite impossible to doubt, comparing our own later experience and observation with the data of older and trustworthy authorities, that acute diseases do not now generally make their appearance in the same violent form that they did a jubilee of years ago. The reaction in question received also a great momentum from the changes produced in the constitutions of men and women by the progress of our civilization.

As a people advances in commerce and in the arts and increases in wealth it acquires habits of ease and luxury, and loses in proportion its moral and physical energy. "It burns the candle of life at both ends," hence the great increase in neuroses or nervous diseases to be observed at the present day. The powers of resistance and endurance are weakened, and there is a general revolt of every thing that is

painful, disagreeable or unpalatable. It should be our care, then, to study and weigh their modifications both in the type of disease and in the constitutions of man and woman, and to carefully adjust old methods to new conditions. By which I mean that we should not abandon but simply modify the use of those important and effective measures which have stood the test of the centuries, such as blood-letting, mercury, counter-irritation and the like.

Is it possible that our fathers were altogether mistaken respecting the principle of depletion in inflammation and congestion? They undoubtedly carried it too far in frequent instances, but is it not founded on a rational theory, and when employed moderately is it not with invariably good results? In like manner the great value of mercury leads to its abuse. Properly administered it is an undoubted antidote to the most terrible of the diseases which vice has entailed upon humanity. It acts, too, specifically as a stimulant upon one of the most important organs of the human system. The error to which I point, almost as prevalent now as in former times, is the indiscriminate employment of this drug in almost all conceivable diseases and conditions as an alterative, and to the extent of producing salivation.

In reflecting upon the use, disuse, and abuse of remedies by our profession, I am tempted to regard the general neglect or abandonment of counter-irritation as presenting the most remarkable change in modern practice. It is passing strange that since we have ascertained the laws of reflex action, by which alone the chief *modus operandi* of counter-irritation can be scientifically explained, we have almost consigned this therapeutic measure to the limbo of the past, setting aside at once the results of experience and the light of modern discovery.

I do not think that the views which I have hinted at,

rather than expressed, on this subject, derogate in any degree from the importance and usefulness of the medical profession. That we have not made the best use of our opportunities, that we sometimes falter in the use of time-sanctioned remedies, or apply them timidly and feebly, far oftener resorting to them needlessly, indiscriminately, and rashly, must all be confessed.

What effect this confession may have on the confidence of the public in the profession is of course a matter of opinion. For myself, I do not believe their confidence will be impaired by any tendency or effort on our part to restrict within its narrowest limit the application of painful, dangerous or uncertain remedies. Nay, I will venture to say this: that if every specific should fail utterly, if the cinchona trees were all dead and the arsenic and sulphur mines all exhausted, if every drug from the animal, vegetable, and mineral kingdoms were to disappear from the market, a body of enlightened men, organized as a distinct profession, would be required just as much as now, and respected and trusted as now, whose province should be to guard against the cause of disease, to order all hygienic conditions of the patient so as to favor the efforts of the system to right itself, and to give those predictions of the course of the disease which only experience can warrant, and which so often relieve the exaggerated fears of sufferers and their friends, or warn them in season of dangers which can not be averted.

Great as the loss would undoubtedly be if certain active remedies could no longer be had, it would leave the medical profession the most essential part of its duties, and all or more than all its present share of honors, for it would be the death-blow to charlatanism, which depends almost solely for its success upon drugs and on the popular error as to their infallible efficacy.

Part of the blame of over-medication rests, as I have said, with the profession, in yielding to the tendency to self-delusion, which seems almost inseparable from the practice; in our mode of inference, too often adopted, of counting only our favorable cases, and in falling into the not uncommon error known in scholastic phrase as "*post hoc ergo propter hoc*": The patient got well after taking my medicines, therefore he got well because of taking them.

The greater portion of this blame, however, rests properly with the public, which insists on its right to be poisoned by somebody; it is obvious who buys the quack medicines which have built palaces for the Ayerses, the Jayneses, the Helmbolds, and last, though not least, the Keeleys of our time. These people have a constituency of millions. Like Barnum of illustrious memory, they believe in and practice on the measureless gullability of a public which actually enjoys being humbugged. The whole dishonest and shameless business is built, as on a rock, upon the popular delusion that sick people must feed upon noxious substances, the more the better, the nastier the more effective.

The outside pressure upon the physician is very great, tending to force him to active treatment, whether in his judgment necessary or not. Some error of diet, some improper habit of the patient, may only need correction, and the administration of drugs be unnecessary or hurtful.

Certain old superstitions, still lingering even in the profession—mists after the sun has risen—are for the most part at the bottom of this error. The faculty has had two or three lessons containing a deep meaning to those who are willing to read them aright. The use of water-dressings, for instance, in surgery, has only of late completed the series of reforms by which was abolished the coarse and

cruel practice of the older surgeons, who, with their dressings of acrid balsams, their tents and leaden tubes, absolutely hindered and delayed the cure.

So now, also, as in a superstitious age, sympathetic powders and the like came in to kill out external overmedication.

The solemn farce-tragedy of homeopathy, whose materia medica is sugar of milk and a nomenclature, is being enacted before our eyes in the present day to teach us the same moral. We should accept the lesson and profit by it. It is, that medicine can not be practiced by fixed, immutable, exact rules; that the science is not itself and can not be an exact science, but is, as it ought to be, a progressive science, constantly pressing upward from failure to triumph, from darkness to light, from doubt to certainty.

My friends and brothers of the art of healing, we have met at this annual session of our Society—a social and professional reunion—to interchange sentiments of friendship, to discuss the subjects presented, to impart the knowledge each has acquired, for a larger part of our most valuable knowledge is derived from a comparison of observation and experience, and to add, by whatever means our meeting affords, our individual contribution to the general sum of professional knowledge.

By means of these annual sessions we are enabled to break away from routine duties for a few days, and by mingling in social intercourse with each other gain that relief from labor and that recreation for body and mind which the overtasked members of our profession so much require.

The range of medical investigation is so wide, and its practice so laborious and exacting, that the life of the physician is one of almost constant study and drudgery. One who conscientiously devotes himself to duty has little time

or opportunity to cultivate even the social and literary pursuits which, by widening his field of culture and practical observation, might increase his professional usefulness. The exercise of our profession imposes constant toil and self-abnegation; but to the true physician there are also the constant excitement, activity, and enthusiasm of acquiring knowledge and of applying it to the relief of human suffering. If performed in the right spirit, there is no nobler offering on any of earth's altars than the unpurchased service of the medical priesthood.

The sick man's faltered blessing reaches Heaven through the battered roof of a poor man's cabin even sooner, it may be, than any *Te Deum* which ever echoed through the arches of vast cathedrals.

It has been said with exact and literal truth, that the characteristic virtue of the medical profession is charity. Where, in all the circuit of the sun, is the garret or the cellar which its messengers do not penetrate, ready in the cause of humanity to be the servants of servants? What districts smitten by pestilence were ever known which its heroes have not braved in their missions of mercy?

Our aim, however we may fall short of it, is beneficence, to relieve human sufferings, to prolong human life. Our study is truth—the glorious truth of nature as revealed in her highest, best, and finished creation.

We do not seek her merely with the devotion of the abstract enthusiast, nor for her own sake alone, nor for our own selfish advancement alone, but for that knowledge which is power, and for that power which works good for our fellow-men.

This Society was instituted and is sustained, as I construe it, not to subserve the selfish interests of a class or of a profession. Not for this, but to melt the gold out of the

past, rejecting the dross of error, to save all the old treasures of knowledge and to mine diligently for new, to cultivate the mutual respect of which outward courtesy is the sign; to work together, to feel together, to take counsel together, and to stand together for the truth, now and always, here and everywhere.

PROGRESS IN GYNECOLOGY: A REPORT.

By David Barrow, M. D.
Lexington, Ky.

In reviewing the field of gynecology for the past year we find nothing that is in actual opposition to the opinions held by gynecologists the year previous; but the real progress in this branch has been in the more general acceptance of the teachings of some of our most active workers.

In many of the societies general as well as special discussions have occurred in recent months that are apt to confuse rather than enlighten the general practitioner. There have been battles waged on many occasions between the advocates of minor gynecology, those who believe in treating the uterus without due regard to uterine appendages, and those who disregard almost wholly the uterus in the treatment of diseases of the pelvic organs.

The first class, as a rule, are enthusiastic advocates of intra-uterine medication, make frequent applications to the cervix, often resort to the uterine dilator and sound, and never rest content unless all cervical tears are pared and stitched up. The second class are enthusiastically opposed to the methods of the first, and seem to think that relief to the patient can be only secured by opening the abdomen and removing the diseased organs. This class of gynecologists believe that much harm is done by the minor gynecologist, and contend that his manipulations are responsible for the disease that often forces these patients to the abdom-

inal surgeon for relief. The minor gynecologist, on the other hand, condemns the work of the major, and believes that the uterine appendages have been too frequently removed, that good often fails to follow the operation, and that the patient's condition is not infrequently worse than it was before the operation was done. That the two classes of physicians whose opinions are referred to are conscientious in the positions taken, I am sure we all believe; but that there is something materially wrong to account for such difference must be apparent. That both are to some extent right there can be no question. I believe firmly that disease of the appendages has been created and aggravated by injudicious treatment of the uterus in many cases; and it is also certain that laparotomy has been too frequently resorted to without sufficient cause, and has utterly failed to relieve many patients of distressing symptoms. What then is the trouble? In my opinion it is the non-appreciation of the true pathology of pelvic diseases and incomplete diagnosis that is responsible for much of the difference that exists.

Bernutz and Goupil years ago wrote the pathology of pelvic disease, but unfortunately their work was never appreciated until recent years. They showed that most pelvic inflammation had its starting point in the fallopian tubes: the so-called pelvic abscess was usually a pyosalpinx, and pelvic cellulitis was almost invariably a pelvic peritonitis. With these facts established, with a knowledge of the anatomical relations existing between the uterus and tubes, and the membrane lining both appreciated, and the known law of the extension of inflammation by continuity, it became evident that manipulations upon and applications to the uterus and vagina, when unduly harsh and unattended with strict surgical cleanliness, were fraught with danger. From an endometritis there might develop

a salpingitis; from a specific vaginitis, extending through the uterus, there often resulted a salpingitis ending in pus formation, and sometimes in a peritonitis so general as to cause death. In this connection I refer to a case I saw with my friend Dr. Patterson. A young woman, a member of the *demi-monde*, about twenty years of age, was taken sick on October 17th. Six weeks before she had been treated for gonorrhea, and it was thought she had been cured. For several days previous to October 17th she was menstruating, and that she might "see company" during that time she had inserted a sponge. She was first seen by Dr. Patterson on the 22d, and at that time was in collapse, and it was on the 23d that I saw her. In his diagnosis of purulent peritonitis I agreed. That night she died, and the following morning an autopsy was held. On opening the abdomen, a quantity of pus escaped; the intestines were everywhere adherent; the tubes and ovaries were disorganized and filled with pus. This case is instructive. From the gonorrhea had set up a salpingitis; the dirty sponge had furnished the septic material to the already diseased tubes, and quickly there followed a general purulent peritonitis. How rapidly these cases sometimes terminate is well shown; in a week the abdomen was full of pus and the patient was dead. Further comment upon this case is unnecessary; its simple narration carries with it truth that must be convincing.

Modern pathology, then, teaches us that the great majority of women consulting us for "womb" disease have in reality no disease of the womb at all, but that the fault, when in the pelvis, is with the appendages; that inflammatory disease of the appendages can be lighted up or aggravated by instituting local uterine treatment under the belief that the uterus is the organ diseased. Unquestionably invalidism has been created, and lives have sometimes been

sacrificed by the non-recognition of the actual local condition existing, and, of course, the adoption of injudicious treatment. We must learn that all cervical lacerations, all uterine displacement, all discharges from the uterus, do not mean actual uterine disease, nor need local treatment, for it will be exceptional for disease of the uterus to be responsible for the symptoms complained of by the woman. We must always remember the serious consequences that may follow the introduction of septic material into the genital track, and use every means in our power to preserve and maintain cleanliness. With a full understanding of the pathology of tubo-ovarian inflammation, accompanied with proper diagnostic ability, I do not believe the errors referred to will be committed. To treat an uterine catarrh by local medication, to repair a lacerated cervix by resorting to Emmet's operation, to forcibly dilate for dysmenorrhea or sterility, with the appendages inflamed, is resorting to methods of treatment that are rarely justifiable, and the physician who does so treat his cases must surely come to grief. To those physicians who have not kept abreast with modern gynecology, and who advocate local uterine treatment for most pelvic diseases (and I believe there are still a good many), the question will naturally be asked, what treatment then can be instituted in these cases of apparent uterine disease? To them I would say, no treatment is better than the treatment that is more liable to do harm than good. In these cases blood and nerve tonics will often do greater good than any thing else; systematic purgation will benefit many; counter-irrigation to the inguinal regions and applications to the vaginal vault will help, as will fresh air and sunshine; so have massage and electricity been highly extolled. So might I mention other treatment that may be required in such cases, but here it is unnecessary. Of course many of them will be forced to go to the abdominal surgeon.

Let us now speak of uterine cases pure. We do meet with cases of endometritis that require dilatation, curettement and application to the uterine cavity, certain cervical lacerations should be repaired, some cases of dysmenorrhea will require local treatment, but it always requires diagnostic ability and discrimination in selecting cases. Never let an appearance of disease of the uterus deceive us; push the examination, if necessary, under the influence of an anesthetic, and before the treatment is instituted let us be reasonably sure of the condition of the pelvic organs. A properly conducted bi-manual examination will usually enable us to form a correct opinion of the condition of the pelvic organs. To correctly diagnose pelvic diseases, it is absolutely necessary that the physician should understand this method of examination, for without it mistakes will be frequently made. As dexterity in the bi-manual method increases, so will the necessity for a recourse to other means of diagnosis diminish. The field then for so-called minor gynecology is mainly with cases of uterine disease pure, uterine disease without tubo-ovarian inflammation complicating it, or without it complicating the tubo-ovarian disease. In such cases the treatment usually employed by the minor gynecologist will be of the greatest benefit, and the results obtained will be most satisfactory; but remember well that it is our duty to preserve cleanliness as best we can in all such maniputations and applications. It is not the use of the pessary, dilator, curette, or even the probe, or the objection to uterine medication that has called forth such vigorous protests from some members of our profession, but it is the indiscriminate use of those things in cases utterly unsuited for such treatment. I could not discard the pessary, the dilator, or curette, for all have rendered efficient service; nor could I get along without uterine applications.

Cases of post-puerperal septic endometritis and specific endometritis, where the inflammation has never extended to the tubes or peritoneum, are not very uncommon, and require special treatment directed to the uterus. Dr. Baldy recently read an instructive paper before the County Medical Society of Philadelphia on Chronic Endometritis. He says of these cases: "A local examination disclosed an enlarged and heavy uterus, from the cervix of which an unhealthy, thickish discharge was oozing. Oftentimes the cervix was eroded, and the mucous membrane of the everted lips, if the lips were everted, bled on being touched with a piece of cotton or an instrument." "In some cases the uterine body was comparatively normal to the touch, so far as its consistence was concerned; again, it might be either too soft or, what was more common, extremely hard, and even almost fibrous in character." It was not an uncommon thing to see an endometritis and a metritis co-existing; in fact, in chronic cases it was rather the rule than the exception. In these cases he dilated the cervix, curetted, and injected Churchill's tincture of iodine, and the results were satisfactory. All must admit that there is a place for the methods usually employed by the minor gynecologist; and although the field has been greatly restricted in recent years, as the pathology of pelvic diseases has become better understood and our diagnostic acumen increased, still the cases that need such treatment are numerous and will occupy a considerable part of the gynecologists' attention.

From the two classes of cases just discussed, let us turn to a third. In the first class are found the cases of tubo-ovarian inflammation without uterine complication, or the uterine disease is more apparent than real; in the second are cases of uterine disease pure, the appendages being healthy; and in the third let us consider the cases in which the appendages and the uterus are both actually diseased.

These cases are difficult to manage, and it will require the greatest judgment and discrimination to successfully treat them. Shall we treat locally the co-existing uterine disease, and, if so, when is the important point to decide?

In the presence of an acute or subacute tubal inflammation, to treat locally a co-existing endometritis or other uterine disease would, I believe, be hazardous, even should all precautions be taken to guard against septic infection. Notwithstanding that some advise such treatment, I must admit that I should fear the consequences, and would never treat locally a disease of the uterus complicated with active tubal inflammation. In this connection I quote from a recent writer who thinks otherwise: "If they (the appendages) were not sufficiently affected to call for the operation (laparotomy), and if the uterine symptoms predominated and were very annoying, I had no hesitation in treating the uterine cavity. A long-nozzled uterine syringe might with safety be passed into the uterus, even in the presence of considerable pelvic disease, and a local application made."

In the presence of pelvic lesions, after the subsidence of the inflammatory condition, we might, with urgent uterine symptoms, resort to local treatment without very great risk, if all precautions against infection be taken and harshness avoided; but the necessity for such treatment must be rare indeed. Such cases must be anxiously watched, and any procedure must be carefully weighed before being resorted to. I know of no class of cases where a keener or more discriminating judgement is required than in these, and even then we will sometimes do harm by injudicious treatment.

In this paper I have addressed my remarks more to the general practitioner than to the gynecological specialist, and I hope that this fact will be remembered in the discus-

sion that may follow. Many of you will be forced to treat gynecological cases, no matter whether you wish to or not, for at your homes there may be no specialist. To such I present this paper as a plea. I plead that you appreciate the pathology of pelvic inflammation as enunciated by Bernutz and Goupil; that you be careful not to convert a simple uterine disease into a more serious pelvic inflammation by instituting improper treatment; that you practice surgical cleanliness in all manipulations upon the female genital organs, as the introduction of septic material may be followed by serious consequences; that you cultivate careful methods of diagnosis, and especially that you appreciate the bi-manual method; and, lastly, that you be reasonably certain of the condition of all the pelvic organs before you direct local treatment to any one of them.

DISCUSSION.

DR. E. R. PALMER, of Louisville: I was delighted to have the opportunity of hearing the paper that has just been read, and I have a few words to say in connection with this very interesting subject. I am one of those disbelievers in moral purity, who hold that a very large proportion of the pelvic ills of femininity are dependent upon what might be called marital gonorrhea. I do not propose to discuss that phase of pelvic septic trouble. A few years ago some eminent investigator (I have forgotten his name) made the statement that, in the examination of the discharges from the vaginas of multiparæ, he found in 50 per cent of the cases examined the various cocci of suppuration; in other words, 50 per cent of the cases in good pure mothers were pus discharges septic in their nature. Now, Mr. President, what I have to say is not at all new, because in 1867 I heard Dr. Thomas, of New York, in the vigor of all his youth and enthusiasm, make a statement similar to what I propose to make now, that is, with reference to the etiology of widespread suppuration or pus generation in the vaginas of our mothers, wives, and nurses also. I saw in a

paper the other day that ladies in a Canadian city had a grand convention, and had celebrated their magnificent resolve by building in a public square a bonfire, being fed by the corsets they had been wearing. It was a revival of the old tirade against the corset. I have not forgotten what Thomas said, that women should burn their open drawers instead of their corsets. The idea of a beautifully dressed woman with trail sweeping the streets! The idea of that mode of dress being countenanced by the profession!

While the profession are warring against corsets, is it not ridiculous, not to say criminal, for us to take the position that the corset is harmful and the open drawers is not? The knights of old used to protect the genital organs of their wives from receiving germs during the day when they had gone to business. If it is gonorrhea, it is due to external infection, and I hold that infection takes place as frequently in this as in any other way on account of the delicate organ being unprotected.

DR. W. H. WATHEN, of Louisville: The paper just read by Dr. Barrow is so very conclusive in most particulars that it hardly admits of any discussion, but I will go over the ground briefly. He takes a conservative view of the subject, which I think is the correct one. There is unquestionably too much meddlesome minor gynecology, and there is too much laparotomy. That cases are treated improperly by entering the uterus with the sound with applicators charged with some medicine, causing pelvic troubles or increasing the pelvic trouble that exists within the uterine adnexa, and that persons are operating and removing the uterine adnexa where other treatment would accomplish the purpose just as well without the mutilation of the woman, there can be no doubt. I concur with Dr. Barrow in these views, and all I have to say is this, that a great deal of the mischief that is done in minor gynecology is because of ignorance or carelessness on the part of the person treating the patient. I have quite frequently heard the expression from men who are recognized as good men in abdominal and pelvic surgery, that the sound should be thrown away, that it had no place whatever in gynecology. I differ with these men, and claim that the sound may be used

very advantageously sometimes; and if it is carefully used I do not believe that it is capable of doing serious mischief. The trouble is that some practitioners who are ignorant or careless will introduce a sound into the uterine cavity where there is extensive salpingitis and probably accumulations of pus; it may cause serious additional trouble. Again, I have seen the sound frequently used without washing it, with enough septic matter upon it to infect, so to speak, the universe. Of course bad results would be expected from that. I have seen the sound introduced frequently without using a speculum to expose the neck of the womb, without cleansing or making aseptic the vagina, and under such circumstances as these we must expect mischief; but where there is no disease or inflammation of the fallopian tubes, where there is an absence of accumulation of pus in the uterine adnexa, where the neck of the womb is exposed and the vagina is made clean, the introduction of an aseptic sound will cause no trouble. I can not refer to a case, in an extensive gynecological practice extending from fifteen to twenty years, where I have ever caused any pelvic inflammation or septic invasion of the tubes or of the peritoneum by the use of the sound. I have never introduced it until I have thoroughly washed it. I have not introduced it until I have exposed the neck of the womb and made the parts clean. If these precautions are taken the injurious effect of the sound will not amount to much. As to the dilator, I believe it is used too much. I have under treatment at present a woman who has been seriously injured by rapid dilatation of the womb. I remember in one instance where there was a pus cavity that ruptured into the rectum, where the woman had salpingitis, a physician of some prominence dilated the uterus upon a number of occasions with rapid dilatation, and of course the results were what would be expected.

DR. L. S. MCMURTRY, of Louisville: I wish to emphasize one or two points in the paper that has just been read by Dr. Barrow. I am glad he took occasion to deal with this subject from advanced lines of the most recent progress in gynecic surgery. It is only recently that we have discovered that the physician often, in his efforts to cure women of comparatively

minor ills to which they are subject, is innocently the means of inflicting upon them a very much more serious malady.

I suppose there are very few practitioners who have had large experience in treating diseases of the pelvic organs who have not seen harm result from too much medication in treating diseases about the cervical canal. My experience has been that it is very seldom necessary to do any thing to the cervical canal. In the first place, with regard to the use of the sound, that instrument is seldom necessary in making a pelvic examination, because there is very little to be determined by using it as a means of diagnosis that can not be just as well accomplished by means of bi-manual touch. The relations of the uterus, the direction of the canal, can be determined by bi-manual touch. In the second place, there is no operation that I know of in gynecic surgery that has been more abused than the operation of Emmet. When properly applied it is certainly a very great therapeutic resource, but there is no woman who has ever borne children who has not a laceration of the cervix in minor or major degree, and it is only exceptional that these lacerations require any surgery. The operations done for them, unless done with thorough precautions as to asepsis and antisepsis, are done upon a field that is so rich in absorbents, and in such close proximity to the peritoneum, that some degree of pelvic peritonitis is the rule.

I will also say that one of the most serious causes of disease in this line of work is the routine use of caustic agents, which produce necrosis of the cervical mucous membrane, misapplied under the presumption that a laceration is an ulceration and invariably followed by a certain degree of pelvic peritonitis. We see these cases treated, and it is said that they get well, that the use of caustics does no harm, but we know from experience that these agents do harm. These patients come to the gynecologist years afterward with some form of tubal disease. The essayist did great service in pointing out how we should treat cases in which we are in doubt. Where there is disease of the appendages, of the cervical canal, or of the endometrium, if we are in doubt about it, instead of using caustics, the curette and uterine sound in probing around the uterus, instead of using strong concentrated applications to

the cervix, or stem pessaries, let the patient have more sunlight, give attention to her general health, send her out in the open air, give her a saline purgative every morning, and make soothing applications to the vault of the vagina.

DR. DAVID BARROW, of Lexington: I have always been a rather enthusiastic advocate of preventing germs from entering the system and keeping the organs of the body healthy, but I never thought of the suggestion of Dr. Palmer, and I think it may be a field of infection that is overlooked by practitioners.

I have no special objection to the use of the probe, but it is an instrument I think is rarely needed, simply because we can make a diagnosis without it. If it is properly used, and proper precautions are taken, I do not see any special harm it is going to do. I believe in avoiding any thing that is unnecessary in the way of manipulation in these cases.

I thank the gentlemen for agreeing with me so heartily in what I have said in my paper.

DISEASES OF THE RECTUM: A REPORT.

By John A. Lewis, M. D.
Georgetown, Ky.

Your committee would beg leave to submit the following report upon diseases of the rectum. At no time in the history of medicine has the general practitioner manifested so much interest as now in diseases of the rectum. We believe this increasing interest is in a larger measure due to our fuller acquaintance with the nature and treatment of the diseases of this region.

This improved state of affairs has been brought about by the industrious and painstaking specialist, who, after years of battling, has at last succeeded in winning back this important domain from the baneful sway of quackery, placing diseases of the rectum and their treatment upon a firm and scientific basis.

It is hard to estimate the debt of gratitude we owe these gentlemen for the signal service they have rendered, not only the profession, but also the cause of humanity. It is within the memory of the older members of this fraternity when the rectum was almost a *terra incognita* to the regular medical profession. The average physician made no pretensions to any knowledge of diseases of the rectum or their treatment; indeed he made free to confess his ignorance on this subject, and nothing was thought of it. The public would just as soon have thought of consulting the village smith for the treatment of a case of piles as the vil-

lage doctor. The quack, with his nostrums for bleeding, itching, and blind piles, had a corner on the rectum.

If I was disposed to occupy your time, I think I could offer you a very natural explanation as to how this strange state of affairs came about, but I will not. As the years passed the scientific physician began to turn his attention to the investigation of diseases in this dark and neglected avenue of the human body; his inroads on this domain provoked the most obstinate opposition on the part of the quack, and for years the rectum has been the great battle-field, a very Esdraelon, between the regular and the irregular. The struggle has about ended, and to-day the entire domain of the rectum lies open to scientific research; its diseases are as well understood and their treatment perhaps more satisfactory than that of any class of diseases which we are called upon to treat.

The importance of a full and scientific understanding of rectal troubles and their treatment can hardly be overestimated when we consider the fact that perhaps one half of the entire population at one time of life or another seek treatment for some rectal trouble. How miserable existence may be rendered by some of these entirely curable rectal diseases!

Howell, in an article containing a great deal of sound philosophy, entitled the Philosophy of Orificial Surgery, says: "There is one predisposing cause for all forms of chronic disease, and that is a sympathetic nerve waste, occasioned by orificial irritation of the lower openings of the body."

This is certain: no man can enjoy existence who is ever conscious of the fact that he has a rectum rendered so by the presence of some harassing trouble in the form of piles, fistulæ, fissures, prolapsus, or ulcers.

From what I have said, no sensible physician can be

deaf to the importance of a clear understanding of these diseases, that he may be fully prepared to perform his part in affording relief to the great army of sufferers who daily seek help at the hands of the medical profession.

In the short *resumé* which I shall make of the treatment of the most common forms of rectal diseases, I shall endeavor to present in concise and practical form some of the most important facts and truths which the rectal specialists have taught us; and if I shall be able to help the general practitioner to familiarize himself with some points which may be of value to him in his every-day work, then I shall lay down my task feeling gratified. The latest advance proposed in rectal surgery is a new operation for fistula in ano, first suggested, I believe, by Emmet, which only differs from the old one, with which we are all familiar, in this, that it proposes by means of sutures to obtain primary union of the incised tracks.

But perhaps the most important matter connected with the treatment of rectal diseases, now attracting the largest amount of interest and being freely discussed, is the new treatment for relief and cure of heretofore incurable rectal diseases by the formation of artificial anus through lumbar or inguinal colotomy. Both these important innovations shall receive fuller mention further on in the discussion of the treatment of the diseases under which they naturally fall.

My limited time shall be almost entirely given to the discussion of the treatment—particularly the surgical treatment—of a few of the most important and commoner forms of rectal troubles. Hemorrhoids must naturally come in for a prominent share of mention in any discussion of rectal diseases. In my judgment no case of hemorrhoids can be radically cured without a surgical operation. If you attempt a cure in any other way you will surely fail, wast-

ing both your time and medicine; you had just as well tell your patient this first as last. You have several excellent and successful operations from which you may select the one you may deem best suited to your particular case.

You may choose between carbolic-acid injection, the ligature, clamp, and cautery, or nitric acid and Whitehead's operation.

You will naturally expect me to give you the present scientific status of the carbolic-acid treatment. I must frankly tell you that most of our prominent specialists have weighed it in the balances and found it wanting. The principal objections urged are pain, extensive sloughing, abscesses, blind internal fistulæ, embolism, and the disposition to return. As to embolism, I think it is more theoretical than real. I have never met a case of it, and I do not now recall the record of but a single case. I think Kelsey about sums up the objections when he says: "The amount of inflammation which may be caused by introducing an irritant into a vascular tumor can neither be foretold nor limited." As to the disposition to return, I think this is perhaps true, the return taking place in three or four years generally. But I am not sure that this charge can not be made against any of the radical operations, though not so frequently.

Now these objections are serious, and come from sources that must command our respect; nevertheless, in the estimation of some excellent physicians this mode of treatment is a justifiable one, and in many instances yields good results. Every operation is open to some objections, and accidents have happened with them all, but are not therefore to be condemned.

If you find a patient who requires an operation, and who has not the time nor the disposition to lie in bed, and who refuses to take an anesthetic, then I think you have just the case for injection of carbolic acid.

By observing the following suggestions carefully, you may be able to obtain a good result without any of the painful or serious consequences which have been set down to the charge of this method of treatment: Use a ten-per-cent solution of carbolic acid in glycerine or olive oil; inject one tumor at a time, not withdrawing the needle for some moments after injecting, preventing as far as possible any outflow of the fluid upon the mucous membrane of the bowel; inject the tumors through a speculum, instead of having the patient to extrude them by straining as is usually done. In this way you avoid having to return the pile tumors by pressure after injecting. The pressure always forces out the acid, bringing it in contact with the mucous membrane, which will invariably produce prolonged burning.

If you precede your carbolic-acid injection with an injection of cocaine, the acid is sure to flow out through the needle-hole, and in this way produces more pain than it relieves.

Pain and sloughing are generally caused by using too strong solutions and injecting too deeply, and treating too many tumors at once.

The foregoing directions, if followed, may enable you to obtain a good result with the least possible trouble, but pain will follow sometimes in spite of every precaution.

The ligature and the clamp and cautery are the two standard operations. The first has found its strongest advocates in the Allinghams; the last has no less strong friends in Smith in England and Kelsey in America.

Both are safe and radical cures. My own personal experience has been with the ligature, and I have never found it to disappoint me. But I have seen enough of late to convince me that the clamp has some very important advantages over the ligature, and in future I intend to give it a more extended trial.

The operation by the clamp is much the easiest operation to perform, and its advocates claim that it is followed by much less pain and after-trouble than the ligature.

Be cautious not to produce stricture of the bowel by removing too much of the mucous membrane.

The danger of secondary hemorrhage has been accredited to this operation, but we are advised by those who ought to know that this is rather theoretical than otherwise, and in reality there is no danger, provided the pile stump is thoroughly cauterized with the iron at a dull red heat. As a rule little or no pain follows. The bowels are allowed to move right along, and the reflex bladder troubles, which so commonly are present with the ligatures, are absent.

Before closing what I have to say on the subject of hemorrhoids, I ought to mention Whitehead's operation. This is certainly the most radical of all the operations, and without doubt it has one thing in its favor, that is, there can certainly be no return of the disease, since the mucous membrane of the entire pile-bearing area is removed; but the operation seems needlessly severe to me, and I can not believe that it will ever become a popular operation with the general practitioner. I think its use will be confined to the hospitals. Certainly it has yielded very gratifying results in the hands of its originator.

We have before mentioned the new suggestion made by Emmet in operations for fistula in ano, that of obtaining primary union of the divided tracks by closing the incisions with sutures. This certainly ought to be a very desirable addition to the operation. All are aware of the tardiness with which the incisions, especially those through the sphincters, heal. They seem to progress very well to a certain point, and there they stop and sometimes remain for months and even years. Reasoning from analogy, I do

not see why we might not expect success to follow operations made according to this suggestion. We have all seen the operation for complete rupture of the perineum extending through the sphincter ani succeed completely, time and again. Exactly the same principle is involved in the two operations, the only difference being in the presence of the unhealthy, indurated, cicatricial tissue along the track. All this, of course, must be entirely removed. This being thoroughly done, I see no more reason for a failure in one case than in the other. To get union of the sphincter ani is the difficulty in both cases, and the same amount of care in both operations will insure like success. Several operators have reported successful cases. But should you make an effort to obtain immediate union, and fail, nothing is lost. To insure success the case should be in a hospital or immediately under the eye of the operator.

In the examination of cases of fistula in ano preparatory to an operation, the physician very frequently meets with that condition of things known as external blind fistula. By the utmost diligence he is not able, with his probe or director, to find the internal opening by which the fistulous track communicates with the bowel. It may help you in finding this internal opening to state that it is frequently found much nearer the external sphincter than you might expect. The injection of milk or some colored fluid through the track, after introducing the speculum, may enable you to locate the point of entrance. Dilatation of the sphincter under an anesthetic will permit you to search the entire lower area of the bowel with the eye, and thus you may succeed after other methods have failed. But now and then every effort to pass the probe will prove futile. What shall be done under this condition of things? Force the director through the mucous membrane into the bowel, converting the fistula into a complete one; make the cut just as in any ordinary case.

After making the incision, then search the track carefully for any divergent ones, follow these with the director, opening them up. One of these divergent tracks you will generally find leading into the bowel. But if Kelsey's method of incising the fistulous track is followed, this trouble may all be avoided. His plan is not to make the cut with one single sweep, as is usually done, but to follow each track inch by inch with a sharp pointed director, searching for and dividing divergent tracks as you advance. By this method few external blind fistulæ will be found to exist.

Remember that you should never completely divide both sphincters at more than one point until you have exhausted all other methods of treatment. Usually all fistulous tracks can be traced to one point, from which you should make your cut squarely through the sphincter.

In curing a fistula be sure that you do not leave your patient in a more deplorable condition than before the operation. This will be the case should you destroy the controlling power of the sphincter ani. Nothing will appease your patient's dissatisfaction if you be so unfortunate as to leave him in this condition, for truly his "last state would be worse than the first."

Bear this now in mind, fistulous tracks have been cured in other ways than by incision; they have been cured by subcutaneous incision, by injection of stimulating fluids, etc. If the tracks are numerous and your patient in very prostrate condition, do not divide them all at one operation.

Internal blind fistulæ are not uncommon. They are difficult to diagnose and troublesome to cure. The most fruitful source of these fistulæ, according to Kelsey, is carbolic-acid injection of hemorrhoids.

It may aid you in making your diagnosis to know that your patient has been treated previously by this method.

The pathognomonic symptoms of this form of fistula are pain on defecation, very much resembling the pain of fissure and the indurated track. Complete incision of the track, with local applications, is the treatment.

Ought lung complications to be a bar to operations for fistula? Unquestionably no! The only point to be considered in these cases is the patient's ability to stand the operation, and whether his vital powers are sufficient to insure healing of the incisions.

No disease of the rectum is accompanied by so distressing and unbearable symptoms as fissure of the anus, and yet we approach the treatment with the greatest confidence. Kelsey claims that one third of the cases of fissure can be cured by a few topical applications of nitrate of silver in the strength of five to ten grains to the ounce, applied with camel's-hair pencil. I am glad that so competent an observer has made this statement, because it will go far to restore the confidence of the profession in this simple remedy; for I am satisfied that the majority have for a long time been of the opinion that a surgical procedure was nearly always necessary to cure a fissure.

By the injection of cocaine under the base of a fissure, before making the incision, you can make an excellent and painless cure without an anesthetic; but if the case is an aggravated one, and you have failed with any of the milder plans, do not hesitate longer, but give an anesthetic, dilate the sphincter thoroughly, and incise through the base of the fissure also.

Abscesses of the rectum must be treated by early and free incisions to limit destruction.

Prolapsus can be treated successfully either by linear cauterization with a point of hot iron, being careful to avoid cutaneous surfaces, or by removing the redundant mucous membrane by clamp and cautery, as in an opera-

tion for piles. Be careful to preserve a strip of mucous membrane intact on each side of the bowel, half an inch in width. This will insure against stricture.

Upon the question of the origin of non-malignant strictures of the rectum, Kelsey found in thirty-nine cases less than thirty-three per cent to be venereal in character. This will be a surprise to the profession at large, who, I am satisfied, heretofore have viewed the majority of these strictures as being of syphilitic origin. It is refreshing to be able to make this statement upon so high authority. For once at least it would seem that possibly poor, erring humanity had been more sinned against than sinning.

The most vital point in the treatment of non-malignant strictures is gradual, painless, but continuous dilatation. The rapid and forcible dilatation of the old method always seems to do harm. Kelsey introduces into the stricture a hard rubber stem on going to bed, and allows it to remain until morning. The patient should not be conscious of its presence.

The treatment of ulceration of the bowels, especially the rectum and sigmoid flexure, may be summed up in very few words. Prolonged rest in bed, with liquid diet and topical applications of nitrate of silver or carbolic acid.

But by far the most important advance in the treatment of rectal diseases is the proposed cure or amelioration of heretofore incurable troubles of the rectum and sigmoid flexure by the operation of colotomy. Colotomy, especially the lumbar operation, is a very old one, but was rarely ever performed except as a *dernier ressort*, with only the thought of prolonging life under very loathsome conditions.

So great was the aversion to an artificial anus that most physicians preferred to let a patient die rather than burden his days with a cure which seemed to be worse really than the disease. But of late a complete revolution has been

wrought, not only as to the loathsomeness of the procedure but also as to ultimate results to be gained by this operation. By the operation of colotomy the fecal discharge may for a time or indefinitely be completely diverted from the rectum, securing perfect rest for that organ, thus enabling the physician to afford amelioration, if not cure, to heretofore incurable rectal diseases.

When one reflects upon the unceasing work of the rectum and the nature of the work, being the great sewer pipe through which the garbage of the entire system must flow, we can not wonder at its many forms of disease, nor can we fail to see the good which may likely follow from any measure which promises rest to this organ from the foul current which constantly sweeps along its surfaces. I have sometimes thought, what a boon a double rectum would be to mankind, if so arranged that one might do the work while the other lay by for repairs! And I am not sure but that Dame Nature had half a mind in that direction, and really made a start for a double arrangement when she threw out the vermiform appendix from the cecum, which after all may be nothing more than an abortive effort at a second rectum.

A most interesting discussion of the merits of the two operations for colotomy is still going on between the different advocates. Bryant claims that the lumbar operation has all the advantages of the inguinal, besides being safer and the easier to perform; but the objections to this operation seem to be the deep incision, difficulty in finding the colon, difficulty in forming sufficient spur to completely prevent the passage of fecal matter beyond the artificial opening, and the awkward position for the artificial anus.

The inguinal operation has many things in its favor. There seems to be an opinion that an artificial anus created in the sigmoid flexure more nearly accords to the natural

one, and that owing to the peculiar nervous distribution in the sigmoid flexure, the patient has some control over the act of defecation. In other words, the patient feels the impulse to have an action, and can prepare for it at certain times. This, if true, is certainly a great *desideratum*, and does away largely with the idea of loathsomeness.

Further, no artificial anus can be said to be a success which does not provide a spur sufficient to completely prevent the passage of feces beyond the artificial opening. The very central idea of the operation of colotomy being to free the bowel below the point of opening from the presence of irritating feces, this can certainly be better accomplished in the inguinal region, where the bowel can be drawn out and fixed in any position required to effect that end.. And lastly, the greater ease and certainty with which the artificial anus can be closed in the inguinal situation leaves little to be desired so far as location is concerned. So far it seems to me the inguinal operation has the vantage ground in the majority of cases to which the procedure is applicable. But there are conditions in which the seat of disease is too high for the inguinal, which may be entirely suitable for the lumbar operation.

I should like to give you the indications for this operation as laid down by the most eminent writers upon this subject, but this paper is already drawn out too long. And yet I feel that I ought not to conclude without referring very briefly to what, in my estimation, is the most important matter connected with the entire subject, that is, to the prevention of these ills, the treatment of which I have spoken.

I believe that constipation is by far the most fruitful source of rectal troubles. I have no time to enter into its discussion; I only wish I had. But it does seem to me that this condition ought to be preventable, if not curable,

and I am impressed with the belief that if we had exercised half the ingenuity, energy, and skill in preventing these troubles which we have exhibited in the cure of them, we would have measurably succeeded. If you will take the pains to make inquiry, you will find that those persons who have regular daily actions of a natural character rarely have rectal diseases. The habitually constipated are the ones who suffer from these troubles. I am confident that constipation largely comes from the neglect to form early in life a daily habit of moving the bowels, and I believe this neglect is most frequently the result of indolence or ignorance, want of time or poor water-closet accommodations. But from whatever cause it comes, whether from errors of habit or of diet, it is the "spring of woes unnumbered." And the medical profession should "cry aloud and spare not" in instructing those over whose lives and health they stand as guardians of the discomforts and dangers which will surely come to them sooner or later as the penalty of this personal neglect. No sensible physician can fail to see wisdom in that adage which says, "An ounce of prevention is worth a pound of cure."

DISCUSSION.

DR. JOSEPH M. MATHEWS, of Louisville: For a great many years, whenever a paper was read before our Society, or, indeed, I might say any society, upon any special subject, it was the habit of specialists to read such papers. It is like a delicious breeze during a hot day to hear from such a distinguished and sensible man as Dr. Lewis upon this special subject, he being a general practitioner instead of a specialist, therefore I have enjoyed the paper more than I can say.

In commenting upon the paper I will take the liberty of disagreeing with him upon some points that my experience has taught me are true. In starting out he has done the specialty the credit of saying it is based upon scientific princi-

ples, and pays a compliment to the rectal specialists of America for bringing it and placing it upon this basis, for which I thank him.

Incidentally he refers to reflexes, stating that any person suffering from any complaint of the rectum necessarily is in a very uncomfortable position because of the nervous distribution. I shall try to make this more emphatic; in other words, I desire to say that the reflexes are so great from the rectum that time and again disease has been supposed to be located in other organs, notably those organs under the surveillance, if I may use the expression, of the gynecologist, where the tubes, ovaries, womb, and vagina have been operated upon, when perhaps a little further investigation would have revealed the fact that the disease originated in the rectum.

The doctor, in speaking of the operation for fistula in ano, said that the wound should heal by first intention rather than by second intention or granulation, and gives credit to Dr. Emmet as originating this operation. In that particular he is mistaken. It is to Dr. Lange that the operation is due. He was the first to look to the healing of fistula by first intention. As far as my experience goes the fistulæ that heal by first intention are very few and far between. When we remember that in the great majority of instances we have more channels than one, running perhaps in opposite directions, running down under the sphincter muscle, etc., we can scarcely get such union; for in cutting away so much tissue we can not get apposition of tissue, and it would be difficult under such circumstances to secure healing by first intention, hence Lange's operation has met with success in a few cases, but in the majority it has not.

The doctor refers to the fact that hemorrhoids can be cured without an operation. If the doctor means to say that well-formed internal hemorrhoids can be cured without surgery, I must say that I differ from him.

DR. LEWIS, of Georgetown: I think Dr. Mathews misunderstood me. I said in my estimation no case of hemorrhoids can be cured without a surgical operation.

DR. MATHEWS (resuming): I am glad the doctor has corrected me. I want to say that it is here that the general prac-

titioner makes a mistake. For a number of months or years, as has been witnessed both in my practice and that of others, these people have tried all forms of treatment and they have failed. A pile has a pathology. There is a change of tissue. It is a tumor, and I do not think any medicine will benefit it, consequently it must be surgically treated. The doctor touched upon the carbolic-acid injection of piles. I had thought we had downed this thing some time ago, as he says rectal specialists have been battling with this subject for quite a while. I can confidently say that there is no specialist either in this country or Europe to-day in the regular profession who believes in the carbolic-acid injection of piles. I think I state this authoritatively. Dr. Kelsey a few years ago advocated this mode of treatment and published it in his work. Later he published a small work, which was an apology for his first position, in that he has abandoned the treatment. Some four or five months ago he told me he seldom now used it.

The idea that embolism can result from the injection of a pile is not chimerical. I believe it can be demonstrated both anatomically and pathologically. Dr. Andrews, of Chicago, reports one case of embolism resulting in this way, and I will say in this connection that the profession of America are greatly indebted to Dr. Andrews for exposing those men who are traveling around the country injecting piles. According to statistics two or three more cases of embolism from this source have been reported.

The ligature, as Dr. Lewis said, is the treatment *par excellence* of hemorrhoids to-day.

I can not believe that the clamp and cautery have the special advantages he has mentioned. I have used them myself, and have seen other operators use them, and I must say that I believe their use is attended with danger, in that hemorrhage may result from the uncovering of an artery that has not been tied. I must say, as Dr. Lewis concedes, that if stricture is feared from the operation of hemorrhoids, it is certainly to be feared from the clamp.

He refers to Whitehead's operation. I wish to discuss it a little. Every once in a while we have a new operation for hemorrhoids and other surgical affections, and it is tried and

found wanting. Whitehead has made great claims for his operation that can not be substantiated. There is danger lurking in the operation that may not be suspected. In this country rectal specialists and general physicians have stated some of its dangers, but on the premise that he assumes so much surgery for a slight affection we condemn it. I think that I can place the matter before you in a few words when I say, why should you attempt to remove so much surface as the pile area in curing a few hemorrhoids? I say the premise is wrong. The condition he takes to be pile-bearing is in fact none at all; simply because the veins are distended with blood, varicose, if you please, is no reason why all such should be removed; this condition will right itself after the tumor is removed. This is true of every operation done by the ligature. If you examine the rectum six months afterward you will not find varicosities; minor surgery will accomplish all that Whitehead has claimed. We escape the hemorrhage, strictures, and other dangers that I might indicate if I had the time.

With regard to fistula in ano the doctor speaks, as many have spoken before him, of the necessity of finding the internal opening to the fistula. I stated a number of years ago, in an article before this Society, that I could not understand the necessity of finding this opening. The method he speaks of was practiced many years ago by Mr. Allingham and others before Kelsey. One thing should be observed in the operation, and that is never to leave an additional sinus, I care not how small. If an operation is done for fistula, and one branch of the main sinus is left, it is not successful, as each and all of them should be sought out.

The doctor speaks also of a very important question in the operation for fistula, and that is its connection with lung disease. He speaks plainly and to the point when he says no hesitation to operate should be indulged. If a person has a fistula that is giving him a good deal of annoyance in the way of pain or any thing else, it has been proven by the best of operators that anal wounds will heal, hence you should operate, and you rid the patient of a more painful condition than the lung affection.

He speaks of the causes of stricture of the rectum. Here

I must radically differ with him. I have kept a record for the last fifteen years of cases of stricture of the rectum occurring in my hospital, dispensary, and private practice, and in the General Address on Surgery, which I delivered at Washington last year, I took the position that sixty per cent of strictures of the rectum were due to syphilis. I believe any man who will observe and trace the history and watch the clinical facts in these cases, and then by examination with his finger, will come to the same conclusion. I do not believe cancer is responsible for the great majority of cases. I do not believe that benign influences are responsible, but that we have a disease which is more deadly than smallpox, yellow fever, and consumption, or all put together, in this country, as the cause, and that disease is syphilis. It has been said by my friend, Dr. Palmer, that it is destroying more people than all of the epidemics that visit our country.

Again, I differ with him when he says that stricture of the rectum should be treated by gradual dilatation. I once said that it reminded me of cutting a dog's tail off a little at a time to keep from hurting the animal. Any physician or surgeon can by rapid dilatation accomplish in two minutes what would take him days to accomplish by gradual dilatation. As to its danger, it is theoretical. It has been my habit to rapidly dilate and break down these strictures, and I have not had a death or dangerous hemorrhage following.

As regards inguinal and lumbar colotomy, I can not conceive of the advantages of inguinal over the lumbar method. The lumbar operation is more difficult to perform. When we remember the operation of colotomy, either lumbar or inguinal, being done because the stricture is in the sigmoid flexure or the rectum, is it not possible, if we open in the inguinal region, it is more likely to be invaded by cancerous disease? Because of its locality the lumbar operation is the better of the two.

DR. WILLIAM C. DUGAN, of Louisville: There are one or two points that I desire to call attention to, and one is with reference to dissection of the fistulous track. Dr. Mathews has called attention to the mistake made by the essayist in attributing the operation under discussion to Dr. Emmet. I have

done the operation several times, dissecting the fistulous track in a few cases, and have had immediate union. It was a case of an old dermoid, which developed under the coccyx, opening into the rectum. After careful dissection, I put in deep sutures, brought them together, and the patient recovered in a very short time.

In a second case I did a proctorrhaphy for incontinence of feces; the operation extended up five inches, dissecting the structures, and making practically the same operation as in the previous case, putting in deep sutures, and securing a good result. In the second case it was an ideal operation. As the essayist has said, we should aim to secure immediate union rather than to leave patients to drag through, so to speak, the granulation process, and heal by first intention.

I beg to differ with my friend, Dr. Mathews, and agree with the essayist in regard to colotomy. The objection Dr. Mathews urges against inguinal colotomy is that you are so apt to find cancerous tissue invading the sigmoid flexure; a mistake that we make in a case of that kind is by going higher; if we draw well down on the sigmoid flexure we thereby prevent collapse.

Treves has demonstrated that both the ascending and the descending colon have a mesentery. They are not simply covered anteriorly by the peritoneum, so the great danger in opening the peritoneal cavity by the posterior method is that it is certainly a difficult operation.

The mortality statistics as found in old works are misleading. You find in some books that the mortality of inguinal colotomy is placed at about fifty per cent. I desire to quote the statistics recently compiled by my friend, Dr. Strauss, of St. Louis, during a recent visit abroad. He reports from the operations of Allingham, Treves, Fritz, and a great many others, a mortality of a little over two per cent against the appalling mortality of lumbar colotomy, which is from twenty to fifty per cent.

I think that the external and internal sphincters have little to do with the control of the feces. The circular fibers are higher up, and as long as the disease does not extend higher than two inches you are not apt to interfere with the function of the rectum.

DR. JOHN A. LEWIS: In regard to the authorship of the operation I did not claim any thing original in the paper. I have searched the journals for twelve months, have taken every one of them, and of course I have authority for what I have said.

In regard to the statistics concerning the pathology of stricture of the rectum, if you read the journals you will notice that Dr. Kelsey reports 400 cases very recently. Of this number there were 33 cases of stricture of the rectum. Of 39 cases only 11 were due to venereal trouble. It is not upon my own authority that I mention this. I believe that a majority of the profession have believed that they were due to syphilis. I felt refreshed when I could make this correction in behalf of humanity.

GENITO-URINARY DISEASES FOR THE YEAR: A REPORT.

By E. R. Palmer, M. D.
Louisville, Ky.

The objects of this paper are twofold. First, to consume as little of your time as possible; and second, to give as succinctly as I can the news of the year in this department of practice.

The male urethra is as of old an active battlefield. Nothing especially new has been evolved in the past twelve months.

Among the experts of the large cities a tendency somewhat toward the elaboration of the electroscopic fad has been manifested. Various modifications of the urethroscope of Leiter have been introduced. Of these, Otis' modification of the original instrument and the wire speculum of F. Tilden Brown are chiefly deserving of mention. The former is much lighter than the instrument of Leiter, and when used with the endoscopic tube of Klotz seems to be about as near perfect as can be. The specula of Dr. Brown, which I saw him apply about a year ago, promise in the hands of experts to accomplish the visual localization of urethral lesions and coarctations. One good this method of urethral exploration has accomplished is to put a check on promiscuous internal urethrotomy, it being demonstrated by the urethroscope that, like other mucous tracts, the urethra may frequently be the seat of localized neoplasmata

that call for enucleation rather than urethrotomy. In cases of genuine stricture, however, especially of small caliber, urethrotomy is deservedly as popular as ever. All authorities, I think, are agreed that if cutting be done in stricture of the pendulous urethra, it should be done internally and on the roof. At Altoona, at the annual meeting of the Genito-Urinary Society in June, 1890, I read a report of fourteen cases of successful internal urethrotomy at the bulbo-membranous juncture without the perineal section, as advised by Harrison, Keyes, and others. Since that time I have done the same operation for close stricture in twenty additional unselected cases, with successful results in each instance. When I say successful, I mean at least a temporary restoration of urethral caliber without urine fever, hemorrhage into the bladder, or any other of the untoward results that are claimed to endanger a purely internal operation in close stricture at or back of the bulb. In doing the operation I get through the narrow opening at the site of stricture with a Bank's dilating filiform bougie, and follow it at once with the Massioneuve staff, cutting on this sufficiently to admit a No. 23 or No. 25 curved sound, which is followed rapidly by No. 27, and, if possible, No. 29, the bladder being afterward emptied and washed out, together with the urethra, with a hot boric and boro-salicylic solution.

Gonorrhea is still a *bête noire*. New treatments that are not new, and old ones ferreted out from dusty back shelves, are heralded in each succeeding journal. Beech-tar creosote in a one-per-cent decoction of witch hazel is declared to be a specific. Six drops of oil of wintergreen three times daily is announced as a good thing, while every new analine, all the antis, and every patented synthetical novelty is vaunted as a dead shot. To demonstrate the marvelous powers of one of these latter, no less than five pages of the New York Journal of last week are given up. This won-

derful specific is dermatol suspended in plasment, and injected with a special syringe made on the paint tube order, and for sale by —— and ——, 41144 Fifth Avenue.

Among the old remedies revamped is one that has been blamed for much damage that it did not always do—one that is powerful for good surely as well as possibly for harm. I allude to nitrate of silver, a remedy that has always held its place in the treatment of deep chronic urethritis, but that is now being urged again as a specific in acute anterior troubles by Dr. Guiteras, of New York City. His plan is to begin in acute cases with a solution, which he himself injects, of 2 grains to 1 ounce, the next day 4 grains, the next 6, the next 8, and the next 10. On the sixth day, in a typical case, discharge slight, no chordee, no ardor urinæ, etc. Same treatment until the ninth day, when the patient returned cured. He, however, recommends that the progression be at the rate of one grain a day instead of two.

Dr. G. E. Brewer, in a paper read last June, advocates as strongly as he did five years ago the retrojection plan of treatment with weak hot solutions of mercuric bichroride. Its results in my hands, while generally of a beneficial character, are not invariably so. In connection with gonorrhea is naturally to be considered the question of cystitis. Tuberculosis uro-genitalis has been shown by Bryson and others to be a quite common form of tubercular infection. Excluding this and calculus, gonorrhea is indisputably the usual cause of cystitis.

It is of interest in this age of surgical aggressiveness to note the skepticism with which Dr. Tyson, as a representative of the purely medical schools, holds many of our vaunted diuretics. Opening of the bladder, rest, and drainage are the surest means of relief in chronic cases, while topical applications of various remedies, such as boric acid, salicylic acid, bichloride of mercury, nitrate silver, etc., are

required in the more recent cases. Of diuretics, copious draughts of pure water head the list. Among the new drugs just now the most popular is diuretin in 15-grain doses three times a day. Diuretin is a double salicylate of theobromate of sodium, and is recommended as combining the two *desiderata*, diuresis and antisepsis.

The significance of albuminuria is a question that it behooves the profession generally to deal with vigorously. The conclusions reached by Dr. Sturgis are those now commonly held by the profession, namely: "That albumen in the urine does not necessarily signify any renal disease, that it exists temporarily in many diseases unassociated with any organic renal complication; that, from the uncertainty of tests and methods of testing, it loses a great deal of its value as a diagnostic sign, and that if present in even a small quantity it is a danger signal, and if persistent indicates some serious organic lesion." In view of the fact that life insurance companies reject all applicants who have even a trace of albumen in their urine, I repeat that the profession owes it to the public that the significance of this symptom should be recast. I will suggest, as causes of a considerable number of such cases, uncured gonorrhea without discharge and of long standing, and persistent bycicle riding. I am quite sure I have seen several cases of albuminuria due to the latter cause.

Two cases of glycosuria have recently come under my care that were evidently of a gouty origin. With the rapid advance in this country of so-called civilization, the gouty habit is becoming indigenous to the soil, especially among the high livers of our large cities, and a possible symptom not to be overlooked is glycosuria. The absence of other symptoms of genuine diabetes mellitus, the presence of additional phases of the gouty diathesis, and the disappearance of the sugar with these other symptoms under an

anti-lithemic regimen demonstrates the true nature of this condition.

The questionable success of electrocution from a humanitarian standpoint has led a number of prominent medical men in New York and elsewhere to urge castration as a punishment for murderers; not a new idea it is true, but yet possibly a very good one.

Speaking of castration reminds me that two comparatively new suggestions have been advanced this year in the matter of treatment of that painful and often serious complication of gonorrhea, epididymitis. Dr. George E. Brewer recommends in both acute and chronic disease of this nature the application of the dry poultice of Langlebert. "The dressing consists in a moderately thick layer of cotton-wool applied over the inflamed testicle. This is covered by a layer of thin rubber protective tissue, so fashioned that it completely incloses the diseased organ, with its edges extending on to the healthy skin of the scrotum. This is secured by a snugly-applied gauze bandage, the whole held in place by a suspensory." I have used the dressing, barring the final suspensory, which I find hardly necessary, and like it very much. The patient is not necessarily confined to his bed, and finds both relief of pain and rapid subsidence of the swelling in its use.

Most of the standard authorities have recommended for years the cautious prostatic instillation of nitrate of silver in chronic and relapsing cases of swelled testicle. Prof. Samuel Alexander, of Bellevue, in a paper publised last December, advised the deep injection of silver solutions in the acute stage as well, beginning with not stronger than a three-grain to the ounce solution, and using of this not more than fifteen minims with a Keyes syringe. He argues that epididymitis always means prostatitis, and calls attention to the successful use of the silver drop in acute gonor-

rheal prostatitis and cystitis. Dr. Alexander reports a number of cases of success by this method. R. W. Taylor calls attention to the statement in a former edition of his work on venereal diseases that Boeck, of Christiana, has recommended this same procedure.

In the matter of syphilis, but little that is crisp can be said. Dr. Taylor assures me that in the new edition of Bumstead and Taylor, now nearly ready, he will have an exceedingly elaborate and comprehensive section dealing purely with the treatment of this malady. That syphilis as a malignant disease is dying out is patent to all syphilographers. Cases now and then present with all the old-time virulence manifesting, but surely in a large majority of the cases, like Prof. Connor, of Cincinnati, we may almost characterize the disease as benign. Whether the civilized world in its germ-plasm is becoming gradually syphilized, or whether the virus through many cultures is becoming attenuated and so benign, or both, or neither, the clinical fact stands as above stated.

In the matter of treatment, enucleation of the initial lesion is hardly any longer advocated, except on cosmetic grounds. The following quotation from a paper published by Jonathan Hutchinson last June may, I think, be given as being strictly true:

"I do not think there can be any doubt whatever that during the last quarter of a century mercury has been steadily gaining the confidence of the profession and the public as the one real remedy for syphilis."

Like this eminent syphilographer, I am exceedingly fond of chalk-mercury in small doses, one or two grains three times a day. It is borne well by the stomach and bowels, and can be given longer than many other mercurials without ptyalizing. Lustgarten's tannated protoxide has been strongly urged of late by C. W. Allen, of New York. I use

a good deal of it, and like it very much. Of course the protiodide is held most generally and worthily in highest esteem, and while treatment by inunction is justly popular, and but for its filthiness deserving of quite general use, the mercurial vapor bath seems to have dropped into oblivion, carrying with it the novelty of a few years ago, hypodermic mercurialization.

I have already consumed too much of your time. More and more interest is being shown in a study of syphilis of the nervous system. The mooted question of relationship of this disease to locomotor ataxia would alone require hours to discuss. Like most students in this field, I am half convinced that a majority of the chronic neuroses of man are syphilitic in their origin, and like my fellows, too, I can not but hold that syphilis and gonorrhea together are responsible for a large majority of all the chronic ills that vex humanity in its fleeting flesh.

DISCUSSION.

DR. H. H. GRANT, of Louisville: In thanking Dr. Palmer for the clear exposition of the subject he has made, and the very perfect manner in which he has described to us the progress of surgery in respect to this particular department, I desire to say I regret very much to hear him make the apology in the beginning that there was scarcely any thing new. Those who have listened to the manner in which he described all the particular points, that are as old now as they were ten years ago, are disappointed in that he did not indicate to us the particular way by which the unfortunate may hope for relief. Notwithstanding the fact that the doctor disclaims almost any particular advantage with respect to the treatment of strictures of the urethra, he has omitted calling attention to the fact that very recently a production has appeared in our literature in which a large number of these infirmities attributed to stricture are the result of disease of the prostate. Dr. Gouley has

produced a series of papers referring to disease of the prostate which have explained away a very large number of the affections that were originally ascribed to prostatitis, stricture, inflammation of the ducts, seminal vesicles, etc.

With these lines before us we can possibly make a diagnosis between these conditions and those ascribed to strictures of large caliber. Dr. Palmer refers to prostatitis, but only in an indefinite sort of way. He does not give any particular means for conditions of this kind, and leaves us practically in the dark. In Dr. Gouley's papers a new treatment is indicated; not that it is entirely new, but it is very appropriate to conditions that have been originally managed by dilatation of the urethra or by cutting strictures that were imaginary and some that actually existed.

This is a long and interesting subject; one that is perhaps almost impossible to elucidate, yet it is a positive fact that a large number of the conditions attributed to chronic gonorrhea are lesions susceptible of treatment directed especially to the locality in which they are situated. I regret that the doctor did not indicate to us how to manage these especial lesions.

With respect to the management of syphilis, there is one point that I hesitate to direct the attention of the Society to, and it is the question of the time at which mercury should be administered after the diagnosis of the disease has been made. We all like to make a diagnosis of the disease as early as possible, in order that mercury may be administered at once. There is no question but what the virulence of the disease is aggravated every hour by the condition going on untreated. There is no other means so efficient in reducing the virulence of the disease as the prompt administration of mercury. When it is possible for specialists in genito-urinary surgery to diagnosticate the existence of this condition at the earliest possible moment, then it is possible to mitigate the severity of the affection. It appears to me that every one should bring home to himself the nature of this condition. It seems to me that even if I fell from grace myself, I should desire the administration of mercury at the earliest possible moment, without waiting for time to demonstrate what accuracy of

diagnosis had failed to establish. If those gentlemen who are pursuing diligently the study of this affection will only administer mercury at the earliest possible hour, rather than wait to establish an accurate diagnosis, the virulence of the affection and the great penalty that is inflicted upon not only the sinner, but the human race, will be largely mitigated.

DR. E. R. PALMER, of Louisville, in closing the discussion, said: I had to time myself on the paper. I read it in my office, and found that it about covered the limit allotted to me. I had before me on my desk Oberlaender's article on the prostate, and Gouley's series of articles published in the New York Medical Journal. I felt I consumed all of the time I had any right to. I will say this, that I did not come before you to advocate, to instruct, or to give any of my own ideas, but I followed what was my conception of the duties of the chairman of the committee, namely, to clip extracts from various medical journals of what seemed newest and best to the general practitioner, and to present them in as succinct a form as possible.

In reference to the matter of time in the treatment of syphilis, I would say that one of the great obstacles to doing right is this: I have never yet met a man who had either gonorrhea or syphilis but what was as stubborn as an ass. They talk of jumping into the canal; they listen to no reason, sense, or any thing else. I believe in administering mercury and treating syphilis the very moment I am sure the sore is indurating and that my diagnosis is correct; but so sure as you do this and the man shows no secondary lesion, any maculæ, any adenitis after a few months' time, no matter how much confidence he placed in you at first and your ability as a physician, he will reason to himself that he never had syphilis, and some smart doctor will tell him that he never had it. He quits treatment, and blames you for having given him mercury. He develops strictures of the rectum, locomotor ataxia, and internal brain lesions of a more profound nature because treatment of the case was not persisted in. When the eruption comes you say to the patient, Look at these spots on your abdomen. Here is one, and there is another. If he comes back months afterward in doubt because free of signs, you turn to your record-

book and find that on the 14th of March malculæ were seen by you, and you tell the patient that he has got the disease, no matter what the doctor or specialist to whom he went may say. If it were left to me, I would give mercury from the very moment the induration begins for its specific effect; but when I look to my own preservation, when I weigh the average idiocy of the diseased man, I am obliged to wait until I prove that he has syphilis, then I put him on mercury.

PROGRESS IN PRACTICAL MEDICINE.

By William Bailey, A. M., M. D.
Louisville, Ky.

Your Committee on Progress in Practical Medicine begs leave to report that this has been a busy year with the doctor, yet it must be confessed that no very striking evidence marks the speed in his advancement. Unfortunately the work of the doctor is not capable of the pyrotechnic display that has characterized the great progress made in late years by the surgeon. His work is more silent and unobtrusive, yet none the less important. It may require much more of both knowledge and skill to conduct to favorable termination a case of pneumonia or typhoid fever than to amputate a leg or to perform a laparotomy, yet the impression made by the surgeon is much greater than that made by the doctor.

Much faithful work is being done in the laboratory and at the bedside, and it may be confidently hoped that we are perhaps on the eve of important results. It must be confessed that all has not been established that we hoped for a year ago, but the work done will not be in vain, for it is yet believed that it is in the right direction, and that these failures may prove the stepping-stones to ultimate success. We had hoped that the claims made by the too ardent friends of Prof. Koch might be found to be well grounded, but the hope born of our desires was destined to perish with experience.

It is reasonable to expect that a more intimate knowledge of pathogenic germs with their various ptomaines and toxic products and their influence on the economy will lead to very important results, and that general medicine will at least gain some of the benefits that have accrued to surgery. It is a more difficult problem to bring to bear germicidal influences in the economy than it is in the field of surgery, where it is safe to apply the most deadly agents without hurt to the patient. The surgeon freely avails himself of the power of bichloride in the destruction of agents that were heretofore so hurtful to man when the subject of trauma; but it is not yet possible for the doctor to occupy the system at large with this or any other medicament so destructive to germ life without doing harm to the man.

It is hoped that the day will soon come when it will be possible to destroy the specific agents or germs now so potent in the causation of disease, or that the body of man may be made unfit for their development. The higher aim of our profession, preventive medicine, may yet accomplish what curative medicine has not been able to do. Let us wish godspeed to Koch and a host of other workers in this most laudable endeavor.

It is perhaps safe to say that a larger number of the human family have been ill in the last year than ever there was before in the history of the world in the same length of time. All eyes have been turned in one direction by virtue of the pandemic that has prevailed. Influenza and *la grippe* have become household words. No other age in the centuries in which it has prevailed has been so favorably situated for the study of its specific cause than this, and yet it has been most difficult of absolute demonstration. The cry has been, lo here, and lo there, till confusion has been often worse confounded. Consensus of medical opinion is that some specific cause must be operating to

produce such specific results, and that most likely the cause is in some specific germ and its products operating through or by means of some general agent, as the atmospheric air. The spread of the disease has been too rapid to be accounted for by any ordinary contagion, for oftentimes thousands of persons in a single city have become the subjects of the disease in a day. The cause must be found in some thing common to the use of all mankind, so we must look for it in air or water. Of all the claims for its discovery or detection, none are so plausible to me as those made by Dr. R. Pfeiffer, of Berlin.

He is assistant to Prof. Koch, of bacillus-tuberculæ fame, in the Institute for Infectious Diseases, and we may well believe that his work is done in that orderly and painstaking way so characteristic of Prof. Koch. He claims to have discovered a form of bacillus in the purulent bronchial exudate of all cases of *la grippe* examined; that the bacillus is rod-shaped, often arranged so as to form a chain, but that it is not a diplococcus, as has been claimed by some observers. He thinks that was a mistake due to the fact that the rod at the pole or end takes a different shade in coloring from the middle, and hence might appear as a diplococcus. He claims that a large number of control experiments demonstrates that they are not found in other diseases, as simple bronchitis, pneumonia, phthisis, etc.; that with the disappearance of the purulent bronchial exudate the germs disappear. This germ is small and difficult to demonstrate for the reason that it does not take readily stainings ordinarily used. Also, that from its small size and slow development it is liable to be overshadowed by other germ-growths in the same specimen. All this, however, can be overcome by careful work, and no doubt we will soon know very well this unwelcome but universal visitor.

P. Cannon has found in the blood of patients during the fever of *la grippe* a rod-like germ which Prof. Koch says is the same as that found in the sputum by Pfeiffer. We conclude that this or some other specific germ of wonderful propagating power operates by means of the atmosphere in the production of this disease. It might be interesting, if time allowed me, to discuss this disease as it has come under my observation in the last three years, but I hope this will be more fully done by my *confrère*, Prof. Ouchterlony, who, I see by the programme, will recite his observations on this subject.

With the introduction of the specific cause and by its products we have quickly developed a clinical history at once decided but varied. The phenomena are usually catarrh of the mucous membrane, fever, and a very decided impression upon the nervous system.

Catarrhal affections have not been very fatal unless in the extremes of age or in those already enfeebled. Most frequently the catarrh has been limited to the air-passages, or extending thence to the lungs. Again, the catarrh has been gastro-intestinal.

The fever and its concomitant symptoms have been such as occur in many other infectious diseases, the pain being perhaps more severe than in most of them, and likewise more wide-spread. Some of the cases have simulated breakbone fever, some migraine, etc. The impression made by the germ or some of its toxic products upon the nervous system has been most decided.

The toxemia influencing the nerve centers gives rise to many of the disease processes. This is the most plausible as well as the most ready method of explaining much of the phenomena observed.

Simulation and partial paralysis of the pneumogastric with vaso-motor disturbances best account for the processes

observed in the respiratory apparatus. This influence on the origin of the vagus also accounts for the enfeeblement of circulation so often observed. Indeed, in most of the cases the nervous depression and mental disquiet are out of proportion to the apparent severity of the attack. Many people, sick for a day or two, show the exhaustion of weeks of ordinary illness.

A long essay would not exhaust the features of the disease in this aspect alone.

It was most difficult to get the average patient to appreciate the gravity of the affection, for often persons endeavored to fight it off until supervening nervous exhaustion admonished them to surrender. Very few diseases have presented such various pathological changes, or have been followed by such a variety of sequelæ.

Time will not permit me to even enumerate the many changes in the nervous system. Neurasthenia is not uncommon for a long time after an attack. Persons who surrendered at once and took to the bed did much better than those who continued their usual avocations. The most successful management of the uncomplicated disease in my hands was by suitable salts of quinia and the coal-tar derivatives so recently introduced to our consideration. Of this group I have been inclined to favor phenacetine, because it gave the best results with the minimum of danger by heart depression.

In regard to this group, known to us chiefly as antipyretics, I want to say that we have in them remedies of great value, and I believe their possibility for good is but feebly appreciated. I think, as we understand better their physiological action, we will find them potent for good for many purposes beside the reduction of temperature. They exert very positive influences over the nervous system, but until their action is more fully understood and their *modus oper-*

andi is determined we can not assign to them their proper place in our armamentaria.

No one will be more conscious of the imperfection of this report than your committee, and but for the fact that he was unwilling for the first place on the programme to be vacant this paper would not have been written.

THE PROGRESS OF SURGERY: A REPORT.

By A. M. Cartledge, M. D.
Louisville, Ky.

Your reporter upon the progress of surgery during the year past finds, no doubt like his predecessors, that greater difficulties beset the way of one who writes from such an abundance of subject-matter than when the field is more restricted. As I understand my reportorial relation to this Society, it is to record the more important advances in the development of general surgery, or, more accurately, the principles of surgery and surgical pathology. The ever-extending tendency to subdivision in surgical practice has necessitated separate reports in the special departments of this branch.

The subject of antisepsis, its relation to surgical practice, and the progress in this branch of surgical principles seems to me of first importance; and you will pardon me if I devote my remarks to this phase of surgical progress alone, leaving other things for the reporters in special departments.

It occurs to me that in the perfection of antiseptic detail we are permitting the pendulum to sway too far toward that ideal application of the antiseptic principle we are pleased to call asepsis. No one will question our right to progressive improvement, but as antiseptic and aseptic surgeons we believe firmly in the doctrine that perfect asepsis is only attainable by a thorough familiarity with the Listerian creed, and an unshaken belief in all of its principles.

From a thorough appreciation of the principles of antisepsis a child was born, and it was called "Asepsis." The child has ever since essayed to be more wise than its parent, and to its lasting discredit has ever disowned its progenitor. Faithful to the noble instincts of paternity, antisepsis has acknowledged and applauded the virtues, nay, total competency of its offspring to meet the requirements of its function in the great healing art, but is not willing to be cast off as a distinct quantity, an ancient delusion, without credit for the traits of its child. In fact, the candid observer, the unprejudiced student, and the man who has followed the battle from the earliest conception of Lister to the present time, knows that to antiseptic surgery is due aseptic surgery; one is the outgrowth of the other; they are both founded upon exactly the same principles, and only differ in the minor detail of practical application. Nay, more, this fact is so obvious that most modern surgeons would be loth to trust the asepsis of a man who did not believe in antisepsis. As a matter of fact, I take it that progressive surgeons the world over are practicing less and less the antiseptic detail and more and more asepsis, yet these same surgeons believe as strongly in the great principles underlying antiseptic surgery as they ever did. They have simply by practice perfected themselves in that most important principle of antisepsis, namely, to destroy the soil until they feel secure in many cases to trust to this precaution alone in securing the marvelous results of antiseptic surgery. Yet this is the quintessence from a logical standpoint of antisepsis, for it rests upon one of the fundamental laws as laid down by its father. If there is no soil, the seed falls upon a barren rock; there can be no growth. If there is no growth, there can be no fermentation; if no fermentation, no putrefaction; and if no putrefaction, no death. Every painstaking student of surgical pathology

has nothing but respect for, if not agreement with, the men who claim that cleanliness is sufficient without the use of chemical agents to combat the deleterious influences of wound repair; but certainly the time has come when patience should not be extended to the belated minority who claim not to believe in the germ infection of wounds, and proclaim aloud that there is nothing in antisepsis, but that asepsis is all that is necessary. To all such we should say it is not surprising that a man who does not believe in the principles or reasons which underlie antiseptic practice should fail to get results. It is very surprising that a man should obtain successful results from aseptic methods alone if he does not believe in the principles of antisepsis, for the practice is nothing but an ideal perfection of the antiseptic method. Finally, we should be very loth to trust the cleanliness of a man who had no motive in being clean other than it was "next to godliness."

As before stated, the tendency to prepare the soil for the undisturbed growth and development of new or regenerative tissue is the aim of the progressive surgeon. To this end the thorough sterilization of parts to be operated upon is of the greatest importance. In the antiseptic short-comings almost inseparable from a large general surgical practice, most of which is in private houses, and much of which is of an accidental character, I know of no one detail having such influence upon the future progress of the case as the thorough cleansing of the skin by razor, brush, and green soap.

The bacteriologist has taught us, and is still teaching us very much, yet the surgeon places these axioms in the crucible of practical experience and adds much to the valuable pointer of his brother worker, the bacteriologist.

Dr. William Welch, of Baltimore, has shown by a careful laboratory experiment that the white staphylococcus,

formerly classified as the staphylococcus pyogenes albus, is a constant resident of the deeper layers of the skin, and can not be destroyed by any means known to antiseptic practice. This has led to the method of introducing sutures beneath the skin by Dr. Halstead and others in order to avoid infection through the suture traversing a septic area. In the light of practice this seems unnecessary. I believe the experience of every observant surgeon is confirmatory of the statements of Dr. Welch in regard to this inaccessible dweller in the skin; however, with proper precautions the danger from this source is so small as not to be considered from a practical standpoint.

When I have stitch abscess, I am sure of one or two things, probably both: either the suture material was not safely prepared, or there was too great tension upon the suture. If these objections are eliminated and the skin prepared by first shaving, second scrubbing for ten minutes with green soap and brush, care being taken that the brush and hands are clean, then wash with sulphuric ether and afterward with mercuric solution 1 to 1,000, such a preparation done by one appreciative of the reasons for so doing it will insure absolute safety so far as this branch of the detail is concerned; the exceptions being in the axilla, groin, anal region, scrotum, and soles of the feet. Here, if time permitted, use the green soap, poultice over night, or after thorough cleansing use the following solution upon absorbent cotton covered with oil silk: Acid carbolic, 2 drams; glycerine, 2 ounces; water, 1 pint. To be applied locally.

For hand disinfection, much the same conditions obtain here as with the skin. Laboratory experiments demonstrate that the ordinary methods are inadequate for thorough sterilization of the hands of the operator and assistants; yet practice proves the efficacy of carefully pared

and cleaned nails, the hands being washed with soap and brush until close observation can not detect a suspicious-looking spot about the nails or crevices of the skin. The time necessary to do this will be from five to fifteen minutes, depending upon the difficulties. Now wash in sublimate 1 to 1,000 solution; and if done with due appreciation of the purpose to be accomplished—namely, ridding the hands of visible or invisible adherents inimical to wound repair—I am not afraid of the results.

Instruments. Instruments are best treated by being sterilized in boiling water for half an hour. Silk should be boiled from half to one hour, then kept in absolute alcohol. There seems to be no valid reason why, with the improved methods of sterilizing catgut so safely, it should not be more generally adopted as a suture material. The silkworm gut is easily disinfected by dipping in a 1 to 2,000 bichloride solution. It is strong, comparatively unirritating, and ties easily.

The improvement in wound treatment is nowhere so manifest as in the constantly-increasing tendency to dispense with artificial drainage. Drainage has ever been viewed as one of the necessary evils of wound treatment, and certainly when the day arrives that we can dispense with it the day of ideal wound treatment will have come.

Healing by blood clot, first mentioned by John Hunter, later by Lister, and finally perfected in recent times by Shede, has crowned the method of Lister with a final glory by reducing the open to the condition of a subcutaneous wound.

Environments, conditions and individual training should always have the greatest bearing upon surgical methods in given cases, and what is the perfection of surgical art in the hands of one man is dangerous experimentation in the hands of another less trained and educated in the antisep-

tic details. I take it that the general surgeon, surrounded as he often is with the most unfavorable conditions, will ever have to observe the laws of drainage in recent wounds, and apply himself in many cases to the least harmful way of properly securing it. It does seem that the time for using rubber or hollow drain as a primary measure in aseptic wounds has passed. Certainly, where artificial drainage is required, catgut strands sewn in the most dependent recesses of the cavity answer every purpose. I do not think we use this now old method of drain enough.

Where drainage and hemostasis can be secured with one agent, I know of nothing which so commends itself as the gauze strip packed into the wound, and removed in twenty-four or thirty-six hours. To this measure I attribute the lives of several patients, especially in abdominal work. This method of Mikulicz can not be too highly praised.

Irrigation. To irrigate a recent wound in uninfected tissue is to admit that there is a breach somewhere in the previous detail of preparation, and it is better to correct this than to subject the tissues to the irrigation of solutions of mercuric bichloride; also avoid the use of water primarily, or at the time of redressing the wound so long as it is aseptic. The blood serum, possessed of antiseptic properties, is the great medium in which the leucocytes live, grow, and perform their life-work of regenerating lost tissue. While water seems to be the especial liking of bacteria, it either destroys the leucocyte or so impairs its vehicle, the serum, as to greatly retard the process of repair in aseptic wounds.

As to external antiseptic applications to freshly closed wounds, iodoform still holds sway; aristol, dermatol, and iodol have all been praised, but surgeons seem loth to renounce the odoriferous yellow powder. This part of the technique would seem to be of the least importance, and

it is probable we keep iodoform because our results are good—a very worthy reason.

Dressings. For dressing, gauze first and absorbent cotton second; these in the order named, or a combination of gauze first, and over this the cotton, constitute the almost exclusive material for dressing; the gauze should be impregnated with bichloride or iodoform, or both, as suits the fancy of the surgeon. As a result of an ofttimes troublesome dermatitis after the use of sublimated gauze, I am more and more inclined to the plain gauze sterilized and impregnated slightly with iodoform. This for aseptic wounds. Occasionally the iodoform causes a severe dermatitis; I have observed this in only two cases out of many hundreds. I have never observed a symptom that could be referred to iodoform poisoning.

Experience teaches me that with our present improvements over Lister's original teachings in regard to the preparation of parts to be operated upon, and cleansing of hands and instruments, if we would take a step backward and adopt more constantly his original ideas (not methods) of the thorough protection of the wound, it would be a marked advantage. Success attained by perfection in other branches of antiseptic technique has emboldened surgeons to practice inefficient protection in many cases. An abundance of absorbent dressing, well protected by plaster or crinoline in the extremities and rubber tissue elsewhere, should be used. If the sublimate or iodoform gauze is used, and these have been carefully protected, or have been recently prepared, I deem their sterilization unnecessary.

We should ever recollect that a perfect result from antisepsis can only come in every case from a perfect technique, and from a full appreciation of the motive of our methods. We should also, whenever indicated, bring to our assistance all other known means of accessory treat-

ment favorable to repair by first intention. Notable among these should be mentioned fixation and constitutional drainage. My observation leads me to believe that surgeons do not practice fixation enough in wounds of soft parts. Asepsis and antisepsis can do wonders, but their influence for good may be overcome when by irritation, such as motion, exudations are favored, and the conditions favorable for the growth and multiplication of bacteria that it is impossible to reach by any means are favored.

Alimentary Drainage. Whether the well-known disturbances of wound repair, that are so prone to occur when the bowels are constipated, are due to inactivity of the secretory and excretory glands, fecal toxemia, or enterosepsis, or to an excessive fluidity of the blood, I am not prepared to say. Dr. Roswell Park has dwelt entertainingly upon this phase of infection in his Mutter Series of Lectures. He is inclined to attribute the great benefit of purgation as a preventive of sepsis in wounds to the stimulation of the liver and freeing the alimentary canal from septic material. While this is no doubt a factor in the action, I am inclined to believe that the chief benefit accrues by the attraction of serum, especially the watery elements of the blood, to the alimentary canal, thus placing the tissues in a better condition to combat deleterious agents to repair. That glandular activity is a powerful promotor of elimination no one will deny, and to this end the administration of a mercurial purgative commends itself.

It is my custom in severe lesions testing the antiseptic method in the extreme to pay the strictest attention to this detail. When done timely it will save the removal of many a dressing. A temperature which rises to 102° and even 103° F. upon the third day, and without preliminary chill, great pain, or unusual rise in pulse, is best relieved, nine-

teen times out of twenty, by doses of calomel, followed in six hours with a saline.

Fecal toxemia, like malaria, is a fertile source of anxiety to the young surgeon. It will cost him many a restless night for fear his wound has gone wrong, and that he should have removed the beautiful and perfect dressing, which he knows it is so desirable to keep undisturbed. To discriminate between the fever of systemic engorgement and fecal toxemia and that from wound fermentation is only possible after much experience; and the young surgeon had better err to the side of unnecessary removal of dressings than make the mistake of waiting until possibly irreparable damage has been done.

REPORT ON OBSTETRICS.

By Arch Dixon, M. D.
Henderson, Ky.

In an untoward moment, at the last meeting of this Society, I consented to report upon the subject of Obstetrics, a subject of scarcely less importance than any we are called on to discuss, but yet a subject the grounds of which have been gone over so often and so thoroughly that its paths may be said to be beaten ones and its precepts hackneyed ones. I have deemed it best, therefore, not to take up time by a recital of recent improvements in obstetrics (antiseptics and otherwise), but to call attention to a few reasons why the obstetrician should in some degree at least be also a gynecologist. I will, first of all, state that it is much more important that the obstetrician should be a gynecologist than that the gynecologist should be an obstetrician.

The science of obstetrics and that of gynecology are in a manner inseparably connected, and should be so taught in our medical schools. It is a lamentable fact that there are hundreds of men, graduates of our schools — *men who never have ruptured perineums*, because they never examine to see if the perineum is torn, or, if one should be accidentally discovered, content themselves by tying the patient's knees together and trusting to nature to repair the damage, or send for some one to sew it up for them— men to whom a lacerated cervix is a sealed book, and its

consequences an unknown problem. To say nothing of such minor troubles as these, how often it is the case that the doctor is called to see a woman in labor, the diameters of whose pelvis will not admit of the passage of a child; he is not prepared to do craniotomy, and perhaps could not if he were, and as to making a cesarian section after the plan of Mr. Lawson Tait, and which is not a difficult operation, that is out of the question, or perhaps never thought of, and the woman is doomed to death. And why? because the obstetrician has never been taught to perform such operations, and as a rule considers them as belonging exclusively to the domain of the gynecologist. The same may be said of symphyseotomy, although a recent report credits Sigault's operation in twenty-four cases with saving all the mothers and twenty-three of the children. In the majority of these cases the true conjugate of the pelvis was not more than two inches and a half.

Again, given a case of ruptured tubal pregnancy: the obstetrician is called; he may or may not diagnose the case, the chances are he will not; but suppose he should, unless he is able to make an abdominal section the woman is almost certainly doomed to death. The attending physician has no time in which to send for the gynecologist, and there may not be one in the radius of a hundred miles of him, so he sits by and sees his patient's life go out (and he goes out too), comforting himself with the belief that he did the best he could for her, and the family is comforted also by the belief that all was done for her that could have been done.

Rupture of the uterus is another condition which also requires immediate and prompt action. 'T is true, rupture of the uterus is not of frequent occurrence, but the obstetrician is liable to be confronted with it at any time, and unless he knows how to do abdominal section and repair

the torn uterus, what are the consequences — a woman dead, with an undelivered child in her abdominal cavity! Again the doctor has done the best he knew how, and the family accept what to them was inevitable. Let us go further and take a case of placenta previa. The doctor is called; if partial, he may be able to manage it in the usual way—but if complete, what is he to do? Mr. Lawson Tait advises abdominal section, but the doctor as a rule does not know this, or, if he does, is not able to operate. Again, what is the consequence—a life sacrificed upon the altar of ignorance; a life which might have been saved, had only the doctor known how to save it. That this picture is not overdrawn, ask yourselves; and if the answer is not satisfactory, ask the gynecologists, and they will tell you that it is, alas! too true.

The question arises, why is it true, and what is the remedy? The answer is simple. Students as a rule are taught obstetrics in a routine sort of a way; they are shown the different presentations — how? *with the manikin.* They go out from school with the mechanism of labor at their tongues' end, but the average medical graduate in his first case of labor could not, if he were to be hung, tell whether the bag of waters had ruptured, or whether the presentation was shoulder or vertex. The professor of obstetrics has no time to teach gynecology, not even the gynecology inseparable from his chair; this is left to the professor of gynecology, who eloquently and elegantly describes to his class the numerous and successful operations he has done in the way of removing tumors, ovaries, etc., all of which were done upon patients who would not think of having a medical student present, and were entirely too aristocratic to breathe the air of the amphitheater. The students see no operations, they are taught to do none, with now and then an exception. Some poor

unfortunate is brought into the hospital and is operated upon. The students from their benches in the amphitheater look on as best they may, and learn as best they can. The operation is more than likely one entirely without the domain of obstetrics. This is not only true of our western schools but it applies with equal force to those of the East. What is the remedy? Teach along with obstetrics the necessary gynecological operations which are inseparably connected with it, and the knowledge of which may, in cases of emergency, save the lives of women who are otherwise doomed to certain death. I know some of you gentlemen connected with medical schools will say, "Why, we do all this." *But, do you?*

REPORT ON MATERIA MEDICA.

By W. W. Richmond, M. D.
Clinton, Ky.

John Ruskin, in one of his lectures on political economy, says that five great intellectual professions relating to daily necessities of life have existed in every civilized nation, viz., that of the soldier, the pastor, the lawyer, the merchant, and the physician. The soldier's profession is to defend; the pastor's, to teach; the lawyer's, to enforce justice; and the physician's, to keep in health. What implements of war are to the soldier, codes and statutes to the lawyer, theology to the minister, and capital to the merchant, materia medica is measurably to the physician.

As all professions attain their highest excellence in proportion to the manner in which they understand and utilize that which is adapted to their furtherance, so the physician, his other attainments in the science of medicine being equal, becomes what he should be when he is familiar with materia medica and its advancement. Hence arises the importance of the subject. There is a three-fold duty which compels every one who would succeed to keep himself familiar with the progress made in the science of medicine.

This duty relates to himself, his patient, and to the profession; and out of this duty, discharged in all its ramifications, is easy to be seen the progress resulting in breadth of thought and experience to the practitioner, in alleviation

of pain to the patient, and general good to the profession. We note with pleasure, then, every useful agency that is being added to the already efficient armor of our science. While we mark the advancement of materia medica as a matter of rejoicing, enabling, as it does, the physician to combat disease with a greater degree of success than in former times, it is well to remember that the advancement is due not only to the discovery and production of new remedies, but in part to the better knowledge of adaptation of many of the older remedies, which have been sheet-anchors in the profession for years, and which are important in merit and administration comparable to any of the present time.

Finding as we do, perhaps, no remedies of higher rank in their various medical properties and uses than veratrum, digitalis, chloral hydrate, opium, chloroform, iodine, and mercury, we are forced to admit that these, with many others of equal age, have helped in their turn to bring materia medica to its present standard. The progress which has attended this department of medicine has undoubtedly resulted in the production of much material that is useless, as well as much that is in a high degree beneficial. To note elaborately the recent advancement of materia medica, saying nothing of the progress made in the last quarter of a century, would be a task quite beyond the limit of my ability and unsuited to the design of this paper. I shall, therefore, do little more than indicate some of the many articles which have recently become of utility to the profession.

Among the most recent of these products, as well as perhaps the most valuable remedies for the reduction of temperature, are the coal-tar preparations, antipyrine, antikamnia, acetanilid, and phenacetine. Much benefit is derived from the use of these, if not administered excessively.

It is believed, and with reason, that when these remedies were first introduced the administration of them was too lavish. It is gaining opinion that the best results are to be obtained by giving them in small doses, thus securing an appreciable reduction rather than a reduction that is very decided. The properties possessed by these remedies attach importance to their use in the tranquilization of the nervous system. The preparations, in virtue of the success which has attended their administration, are regarded as possessing value of a very decided character. They certainly demand the close attention of the profession, offering as they do grounds for great expectations.

Strophanthus and nitro-glycerine claim merit and offer inducement for consideration and ask to be recognized as heart tonics. Papoid, derived from papaya carica, is a digestive remedy, new and vegetable, and its importance an undisputed fact. Johnson and Johnson, of New York, in a pamphlet entitled "Papoid, its Formula and Methods of Use," have rendered a valuable service to the medical profession in putting in concise form the results of administration of papoid, so as to render accessible to the busy practitioner what otherwise would be difficult to obtain in the immediate demands of practice. This new remedy is considered of great utility in disorders of digestion, stomach catarrh, chronic dysentery, and flatulent diarrhea.

Among the foremost applications are its administration in the displacement of the false membrane which occurs in croup and diphtheria. In the use of papoid for diphtheria results are very satisfactory; the arrest of the disease, destruction of bacteria, displacement or detachment of the membrane so as not to reform, easy respiration, and, in a large majority of cases, complete cure, are specified as resulting from its use. In attestation of its merit in the treatment of other diseases the success which has been attained is triumphant.

In surgery, "cancerous growths," fissure of the tongue, and diseases of the ear, together with adhesions and false tissues, the success claimed for it is equally high. It certainly commands attention and justly deserves the prominence given it.

Sulfonal is guaranteed, as a trustworthy hypnotic, a prominent position among the valuable remedies of recent date. Its claims to recognition are very strong. Reliability and freedom from effects which operate deleteriously upon the circulation are said to be among its leading qualities. This accepted, the claim that sulfonal satisfies a want long felt is as real as it is noteworthy.

Salol claims notice as a remedy for virtue and efficacy, and has been prescribed with benefit in rheumatism and gout. In the recent epidemic of *la grippe* it has been prescribed, combined with quinine and phenacetine or antikamnia, with very excellent results. The value of antiseptics is worthy of careful consideration, occupying as they do a position of importance to surgery, to the alimentary canal, and to practical medicine in the treatment of infectious diseases.

The introduction of aristol as a substitute for iodoform has superiority very generally recognized. This new drug, it is claimed, and experience would, it seems, justify the claim, has properties which take the place of iodoform with none of its objectionable features.

When it is remembered that iodoform is a powerful therapeutic agent in almost every department of medicine, notably that of dermatology, that it has in combination stimulating and antiseptic qualities, possessing also valuable properties as a local anesthetic, the value of aristol in replacing iodoform may be readily conceived, and the introduction of it a material advancement in materia medica.

Dr. Eichhoff, physician to the Dermatological and Syphilogical Department of the city of Elberfeld, to whom acknowledgments are made for information on the subject, has used aristol in skin affections with most gratifying results.

In gynecological practice this new iodine compound, as a therapeutic agent, is possessed of merit which it is claimed will well reward the further investigation of gynecologists. Being as good, if not better than iodoform, it has none of its toxic properties and disagreeable odor. In diseases of the nose, ear, and throat it has qualities which are claimed to be superior to boracic acid, iodoform, and iodol.

Dr. Langgard, on the mode of prescribing aristol, emphasizes that it should in no case be used in connection with starch, caustic alkalies, or carbonates, or such other substances that have affinity for iodine. The conclusion arrived at is that aristol should be used alone or in ethereal or oleaginous solution, or mixed with collodion, lanolin or vaseline.

There is yet another substitute for iodoform which claims respectable notice and position. I refer to the new iodine compound, europhen. As an antiseptic and antisyphilitic it is said to possess qualities approximately incomparable. In an abstract from an article written by Dr. Eichhoff it is declared that europhen has been of great healing power in various directions, being employed in many cases to Dr. Eichhoff's extremely great satisfaction. Experiment upon ulcerative and inflammatory conditions of laryngeal, pharyngeal, and nasal diseases has been of excellent character.

Thus we have in aristol and europhen two new antiseptics added in the past year to our already valuable list, yielding results so satisfactory as to call attention of both physician and surgeon.

Much advancement necessarily beyond a cursory review of materia medica might be profitably discussed, but in conclusion will only ask your attention to the importance of sulpho-carbolate of zinc in the treatment of typhoid fever, diarrhea, and dysentery. The history of medical science, like that of literature and art, furnishes evidence that every improvement made, whether the intention be to improve or to supersede, finds its basal element and incentive to its existence in the age that has gone before.

While then we are welcoming with supreme delight every manifestation of progress, and adhering to every rule of recognized truth, let us not abandon ourselves to the whims of every new claimant, but rather strive for that equipoise between the new and the old which is essential to the successful administration of an advancing materia medica.

Let us hope that there may be enough conservatism in the profession to maintain, by a successful administration, every useful article which has been or may hereafter be introduced, and that every degree of progress may be a perceptible gravitation toward that great center wherein lies the realm of ultimate fact.

REPORT ON THE VITAL AND MORTUARY STATISTICS OF KENTUCKY FOR 1891.

By T. B. Greenlev, M. D.
Orell, Ky.

At our annual meeting last year I had the honor of being appointed a committee to report on the Vital and Mortuary Statistics of the State, and as I can only repeat what I said on that occasion, that we, unfortunately, had no statistics of our own pertaining to population, my report on the present occasion can only be of doubtful accuracy, as it is compiled from the United States census report of 1880, based on the ratio of increase made in the decade from 1870 to that of 1880. In order to get at the births and deaths of 1891, and the increase of population for the past eleven years, I take the number reported in 1880 and get the ratio of increase, as before remarked, as existing in the decade from 1870 to 1880. I should, however, have premised these remarks by stating that I expected to have been able to make this report from the United States census for 1890, but by inquiry of Dr. J. S. Billings, I learned the Kentucky statistics had not been published, and hoping they would be by the latter part of April I made a second inquiry, but they are still unpublished.

Thus it will be seen my only chance to make a report is, as before stated, by reference to the United States census of 1880.

According to the census of 1880 the population of Ken-

tucky was 1,684,600. In the same year the mortality was 23,718, being 14 per 1,000 of the living population, or 1.40 per cent. The number of children born that year was 52,982 or 1 to 31.43 of the population. The ratio of births to deaths was 2.24 to 1. The ratio of males to females born in 1880 was as 1.19 to 1.17.

The increase of population from 1870 to 1880 was 363,600, equal to 27.5 per cent. The increase in births was 10,962 or 26 per cent; and in deaths 9,373 or 39.9 per cent. This would seem to be a large increase in mortality, but it will be recollected that 1870 was a very healthy year, the death-rate being only 10.86 per 1,000 population.

Now, if we make the same ratio of increase from 1880 to 1891 as the census shows for the decade of 1870 to 1880, the population will be for the last year 2,194,300, and the increase 510,000, or 30 per cent in eleven years. The increase of births for the year 1891 according to ratio of the decade from 1870 to 1880 would be 14,566, the whole number being 67,548, equal to 32.52 of the population or 27.55 per cent, and at the same ratio of mortality as in 1880 there would have died in 1891 the number of 30,800, being 14 per 1,000 or 1.40 per cent of the population. The ratio of deaths to births is as 1 to 2.

The census of 1880 shows that of all children who died under 5 years 60 per cent died under 1 year, and 53.5 per cent of all that died under 10 years. This is an alarming fact, and should call on medical men especially to give closer attention to the welfare of the little ones.

Of the 1,680,600 population in 1880, 329,000 were colored, but as the vital and mortuary statistics were not separated from the whites, we have no means by which to make a ratio of increase of their birth- and death-rate. Could this be done, no doubt the death-rate of the white population would be somewhat lowered.

The late United States census returns for Kentucky show a population only of 1,858,600, which doubtless is incorrect and far below the real number of the people of the State. This is very evident when we make a comparison of the increase from 1870 to 1880. The population in 1870 was 1,321,000, and in 1880 it was 1,684,600, the increase during the decade being 363,600. If we allow there was no greater increase during the decade from 1880 to 1890, this number added to 1,684,600 would make 2,047,000 for 1890, but we consider the probability of a greater increase from 1,684,600 in ten years than from 1,321,000, the population that afforded the increase of 363,000 in the decade from 1870 to 1880. There would, then, seem to be a deficit in the nnmber of people, as enumerated by the census-takers of 1890, of over 200,000. Of this fact we can hardly be mistaken; for it is not reasonable to suppose that the census returns of 1880 included more people than the State contained; nor is it reasonable to presume that the same ratio of increase of population was not maintained during the decade from 1880 to 1890 as was from 1870 to 1880. There existed no cause in action during that period to have retarded the growth and increase of our population, but, on the other hand, it was one of the most prosperous periods in our history. There was a large immigration to the State, many towns and settlements made, manufactories established, and mining operations greatly increased.

The only statistics of our own for the last year I was able to obtain were those of the mortality of Louisville, furnished by Dr. Galt, the able health officer of that city, which is as follows:

Total mortality, 3,087, male, 1,470 — female, 1,517. Color: white, 2,288—black, 799. Nativity: United States, 2,376; foreign countries, 711. Under one year, 556—one

to two years, 168—two to five years, 192—five to ten years, 139—ten to twenty years, 212—twenty to thirty years, 359—thirty to forty years, 288—forty to fifty years, 222—fifty to sixty years, 287—sixty to seventy years, 308—seventy to eighty years, 216—eighty to ninety years, 96—ninety to one hundred years, 13—over one hundred years, 6—not stated, 38.

Estimated population of the city, 200,000, making the death-rate 15.43. This is quite a low mortality when we consider the colored population is included in this estimate.

The United States census report for 1890 only made the population of the city 165,000, but it is known that many citizens were left out by the enumerators. The City Directory of that year, allowing the ordinary calculation per name, made it about 190,000, and there is but little doubt that the population has increased 10,000 since its publication.

This is a very favorable showing for the sanitary condition of our metropolis, and on comparison with the death-rate of other large cities of the Union she will stand near the top of the column.

It would seem strange to an outsider to be informed that the city has no vital statistics. I was speaking to Dr. Galt on the subject, when he remarked that he had been making some effort in that direction, and regretted that we were so far behind other cities in this particular. It is to be hoped we will soon see Louisville wake up, and a record of her births reported to the Health Department.

It will be recollected that at our last meeting a committee was appointed to present an outline of a proper law before the legislature, at its ensuing session, for the efficient collection of vital and mortuary statistics of the State. This committee was composed of Drs. J. N. McCormack,

Beecher Todd, and myself. Before the close of the meeting I had a conversation with Dr. Todd, not finding Dr. McCormack, and he left the whole matter in the hands of Dr. McCormack and myself, saying whatever measures we agreed on he would sanction. As I had no opportunity to confer with Dr. McCormack personally, I wrote to him last fall to get up such a plan as he thought most advisable for the consideration of our legislators, and I would sanction it, as he was more familiar with such matters than the other members of the committee. The doctor responded, that owing to a measure the State Board of Health was intending to bring before the legislature to prevent the adulteration of food and medicine, he deemed it unadvisable to attempt to get a law on statistics passed the present session, as too much at a time from the doctors might disgust the stomachs of our Solons. I answered him, claiming that it was essential to have mortuary statistics, or we would never know the dire effects of adulterated food and medicine.

This virtually left me alone on the committee, and as I had been at work on this matter for several years, I disliked to postpone it any longer; and as I had seen nothing of the other measure before the House, I was determined, if possible, to have the bill before that body this session. So, a few weeks ago, I wrote out what I deemed to be an efficient statute respecting the matter, and put it into the hands of our county representative, who promised to have it before the House the past week.

I based the provisions of the proposed statute on the law of Indiana pertaining to this matter, but varying in some particulars. It makes it obligatory upon all practitioners of medicine and midwives to keep a record of all cases of births and deaths, and make returns of same at the end of the year to the Secretary of the State Board of

Health. It also enjoins all clergymen and others who perform marriage ceremonies to make annual returns of all marriages to said secretary. All said parties are to have blanks furnished them by the secretary. In order to prevent physicians and others thinking they were working for nothing, the statute allows them ten cents for each case reported, or five dollars annually. I presume, however, that many physicians who are given to do so much gratuitous work would ignore pay for this. The statute also allows our friend, the honorable secretary, an honorarium of five hundred dollars annually for tabulating and compiling the statistics in proper form for publication.

In order to give the matter more impetus, a fine of $5 to $10 will be assessed for neglect of duty in making proper returns. So it will be seen that there is a slight inducement ahead, and an impetus behind, to remind one of his duty.

Cases of infectious or contagious diseases must be reported to the Secretary of the State Board of Health immediately on making their appearance.

For the honor and credit of the State I hope this measure will become a law, and that every member of the profession will take pride in complying with its provisions.

Kentuckians are a proud people, and like to have it known among strangers that their State products are equal, if not superior, to other States. They can boast of their fast horses, good whisky, beautiful women, and that they produce half of the tobacco raised in the United States, and ninety per cent of the hemp. They can also boast of the State's renown in great statesmen, jurists, and orators, perhaps equaling if not excelling any other State.

The medical men are also proud of the fame the medical profession of the State has enjoyed for many years; perhaps equal or greater than most any other State. Let

us hope, then, as we stand so high in every other particular, we will not be content until we can have an effective law by which we can know something of the status of our population as it respects the birth- and death-rate, and their sanitary condition, so that we will not be ashamed of our ignorance and lack of interest in the growth and hygiene of our people. Let a sense of duty and patriotism, to say nothing of professional pride, impel us to wake up in this matter and take a stand equal to that of the foremost of our sister States.

"Our hearts are with our native land;
Our song is for her glory."

"Let fowlk bode weel and strive to do their best,
Nae mair's required."

REPORT ON ABDOMINAL AND PELVIC SURGERY.

By William H. Wathen, M. D.
Louisville, Ky.

There is probably no department of surgery that has been carried to a greater extreme by enthusiasts and record makers than laparotomy. This fact has become so flagrantly manifest that there is a general protest from honest, learned, and conservative abdominal and pelvic surgeons against the unnecessary and sometimes criminal mutilation of women.

At the meeting of the American Gynecological Society at Washington in September, 1891, composed of men who are as learned and successful surgeons as any in the world, there was a determined and nearly universal effort to impress upon the medical profession the wisdom and benefits of conservative gynecology, and the evil of too much needless mutilation in laparotomy. Dr. A. Doleris has fearlessly discussed the subject "Too Many Needless Mutilations—not enough Conservative Gynecology," in the July and August numbers of the *Nouv. Arch. d'Obst. et de Gyn.* His extensive gynecological practice affords excellent opportunities for observation, and his conclusions are that eight tenths of the women upon whom laparotomy or hysterectomy has been done submitted needlessly to the operation, and that in Paris alone there are four thousand women who have been deprived of their ovaries or uteri without sufficient cause.

While I offer no apology for any one who does these operations where they are not indicated because of ignorance or for the purpose of making a record of a series of successful laparotomies, I am sure the abuse is not so far-reaching in this country.

From an abstract of Doleris' paper in the January (1892) number of the American Journal of Obstetrics and Diseases of Women and Children I quote the following:

This is an age in which unscrupulous and unreasoning operative boldness, more or less helped out by antisepsis, too often takes the place of true surgical knowledge. Hysterectomy and laparotomy are undertaken apparently for the sole purpose of increasing the physician's list of operations performed. Only the immediate result is taken into account, while those who stop to ask whether less radical measures would afford the desired relief are few in number. . . . . .

In the report of hysterectomies the whole truth is unfortunately not always told. One operator has claimed that the patient *obliged* him to operate. After palpation and prolonged internal examination the diagnosis was still utterly beclouded. He performed hysterectomy, and removed uterus, tubes and ovaries, all in a *perfect condition of health.* Could the patient have forced him to throw her out of the window? . . . . .

Can it be that operations are performed principally that young surgeons may acquire experience and dexterity, and that if legitimate subjects of operation are wanting the accommodating operator will perforce content himself with what he can get? . . . . .

Neophytes in gynecology seem to have but one idea—laparotomy, sensational operation, a round dozen of castrations to start off with! Cases suddenly assume a dangerous aspect; and if nothing dangerous can be made of them, at least they necessitate an exploratory incision; but the abdominal wound is rarely closed without the extraction of—something. This is not gynecology; it is merely surgical license. Let the extremists beware! They are playing with edged tools. In the course of time people will no longer be taken in by their

affectation of simplicity, their occasional acknowledgment of error—"very deplorable, no doubt"—and their absolute mania for operating. . . . . .

But in the face of threatened danger the honest man can scarcely adopt the principles of *laisser faire*, nor can the real gynecologists, who desire the good of their patients and who wish to be worthy of their profession, hold their peace when they witness the excesses committed in the name of abdominal surgery.

Cases are not wanting in any large city to verify in a degree the severity of these criticisms. A lady was referred to me by her consulting physician. Her physician had diagnosticated extra-uterine pregnancy at four and one half months, and had urged her to allow him to do a laparotomy and remove it. He had dilated the cervix and had introduced a sound into the uterus. This gentleman had successfully operated upon another woman for an extra-uterine pregnancy. The history of the case did not show a symptom of extra-uterine pregnancy, and in an examination a typical intra-uterine pregnancy was at once diagnosticated. The finger could be easily introduced through the dilated internal os, and the presenting head of the child distinctly felt. I could not understand why her doctor suspected extra-uterine pregnancy, but had it not been for the wisdom and conservatism of her consulting physician an unnecessary and probably fatal laparotomy would have been done.

Some months since a lady consulted a physician, who diagnosticated an ovarian cystoma and recommended an ovariotomy. The woman was delivered of a fully developed child some months later, and the tumor suddenly disappeared. Another lady consulted a physician, who diagnosticated an ovarian cystoma, and sent her home to return in a few weeks for an operation. Her home physician was consulted and discovered that there was no tumor, but that

his patient was five months pregnant. In another instance a lady was told that she had extensive pelvic adhesions, and that her uterus, ovaries, and tubes were firmly bound down; that she could never become pregnant, and that a laparotomy must be done and the ovaries and tubes removed. She was not operated upon, but two months later conceived and carried her child to term without an untoward symptom, and is now a happy mother. In another instance a laparotomy was urged at night, because if delayed until morning it would be too late to save the life of the patient. The consulting surgeon could discover nothing to justify an operation, and in the morning there was not a symptom indicating the necessity for a laparotomy.

It is needless to multiply cases to show the evils that may result from a mania to report a long series of abdominal sections.

I have several times been called to cases of malignant disease where the surgeon had decided to do a vaginal hysterectomy, but wanted my approval before operating. The disease had extended to the uterine adnexa, and the uterus and other pelvic structures were so matted together that mobility was destroyed, and the uterus could not have been removed without destroying the life of the woman. But granting that the uterus could have been removed and the woman recover from the operation, much of the cancer would have been left, and the operation could not have prolonged life. This is not the first time that I have protested against the abuse of laparotomy, as will be shown by the following extract from a paper read before the Section on Obstetrics and Gynecology, at the May (1891) meeting of the American Medical Association at Washington:

There is too much laparotomy done and too many men are doing it—men who know too little about the diagnosis and

pathology of abdominal or pelvic diseases, or about the best technique in operating, and have few facilities for doing such work. Continuously good laparotomy work can not be done except by men who largely devote themselves to this department of special surgery, and with such men some cases are operated on where the indications do not justify it. . . . As the experience of an honest surgeon widens he operates relatively less frequently, and he can recall cases that he does not believe should have been operated on. An honest, intelligent and careful man may, when young in observation and practice, make mistakes in the selection of suitable cases for laparotomy, but this is less frequent than it was a few years ago. It is criminal to do dangerous or capital operations while ignorant of the best methods of doing such work, or for the purpose of adding a little cheap glory to our reputation, or to report cases that apparently recover from the immediate effects of the operation as permanently relieved before the final results can be appreciated. Such men usually have many bad results or deaths that they do not report so promptly, and the profession or the people seldom hear much about them.

The time allotted me will not admit of a detailed description of my technique, so I will mainly reserve this for another occasion, and confine my remarks to a few general questions in which all laparotomists are interested.

Chemical germicides, either in solution or on sponges, the hands or instruments should not be used on healthy peritoneum or on denuded surfaces where the success of an operation depends on the union of coapted parts by adhesion, for if used strong enough to destroy micro-organisms they will also destroy the surface layer of cellular elements that needs to be preserved as the most potent and powerful factor in combating the invasion of pathogenic bacteria. The peritoneum is a peculiar structure, and its single layer of endothelium seems to be endowed with great antimicrobic powers, so that the introduction of pyogenous microbes may cause but little if any disturbance. This

fact has been conclusively demonstrated by observation in intra-peritoneal surgery, where cavities of pus, with the streptococcus, or staphylococcus pyogenes, aureus and albus, have ruptured in the peritoneal cavity and caused no peritonitis or septic infection. The cellular elements of healthy tissues are always ready to battle against the introduction of poisonous microbes, but this property is more highly developed in the leucocytes. The experiments of Grawitz, Laruelle, and Waterhouse proved that the introduction of pyogenous microbes into a healthy peritoneum was usually harmless unless some irritating substance was present. Laruelle used fecal matter and bile. Pawlowsky found that the chances of peritonitis from the injection from pure cultures were greatly increased by the presence of irritating antiseptic solutions. The chemical germicide will never destroy all the bacteria that may enter the peritoneal cavity from unclean surgery, or from the rupture of a pus cavity, but it will, just as bile and other irritating substances do, deprive the peritoneum of its endothelial layer, thereby leaving an open connective tissue space with but little resisting power against septic invasion; the few or many bacteria left in the peritoneum are given a fertile nidus in which they may multiply rapidly and cause fatal peritonitis. But if, perchance, the patient escapes septic infection, local or universal adhesions are formed that cause great suffering and may cause death. This has been positively demonstrated by the experiments of Delbet and Marcel on the action of antiseptics upon the peritoneum, published in the *Annales de Gyn.*, 1891. It is also the observation of experienced laparotomists that secondary operations for peritoneal adhesions are more frequently required in cases where antiseptics were used in contact with the peritoneum. If we do an aseptic operation we do not need

antiseptics, and if the operation is not aseptic, antiseptics will not make it aseptic, so that we may lose much and gain nothing. Antiseptics may be used before and after laparotomy, but not during the operation, and if the hands, sponges or instruments have been in a chemical germicide they should be washed in sterilized water before they are brought in contact with the wound in the abdomen or the peritoneum. Every thing used in a laparotomy except catgut and kangaroo tendon may be made aseptic in a Koch's or Arnold's sterilizer, or by boiling; hence there is no necessity for using an irritating and dangerous chemical germicide.

Pozzi does not now use antiseptics after the abdomen has been opened, and Sänger and Veit have abandoned them, while Bantock, Tait, and other distinguished laparotomists glory in the fact that they have never used them.

The best immediate and subsequent results in abdominal and pelvic surgery that have been recorded are in the practice of men who do not use antiseptic germicides. My experience and observation teach me that many of the most persistent advocates of antiseptics do not correctly appreciate the practical value of surgical cleanliness, but expect the antiseptic to make all aseptic; and just here lies a great objection to the general use of chemical germicides, and many women have died of septic infection, or have been maimed for life from peritoneal adhesions because of reliance upon such means. If every thing is not made practically clean without the germicide, we can not do an aseptic operation by using it. If all abdominal surgeons correctly appreciate the value of and the best means of accomplishing surgical cleanliness, septic infection following laparotomy would be comparatively infrequent.

As I have said, at another time the spray is of no value, for the excellent results in laparotomy done in crowded

amphitheaters show that the danger from atmospheric infection is practically *nil.* Some men who use the spray, Don Quixote-like, while pursuing an imaginary foe, allow the deadly enemy to enter through numerous neglected channels—the hands, sponges, sutures, instruments, etc. Every operator should observe the broad principles that make the foundation of all good surgery, but if he neglects the details he will be disappointed in the results.

I will not detain you with my views of the best means of making and keeping every thing aseptic in abdominal and pelvic surgery. I have treated this subject in detail in a paper read at the New York Academy of Medicine, in September, 1891, before the American Association of Obstetricians and Gynecologists, a copy of which has been placed in reach of more than half of the members of the medical profession of this country, and my position is generally known. Since I have practically excluded chemical antiseptics from the operating-room in laparotomy, and have a specially trained nurse and experienced assistants, my patients seldom have an untoward symptom, and usually make an uninterrupted recovery without elevation of temperature or acceleration of pulse. Most of my recent operations have been done in an elegantly arranged operating-room, where all the details of an operation may be conveniently made aseptic. This can not be so easily done in operations in private houses. But no micro-organisms may be carried into the peritoneum by the operator, and still the patient may die of septic infection caused by pathological products within the abdomen or pelvis containing pathogenic germs which every precaution known to abdominal surgeons will not remove. Nor is it possible from a physical examination during an operation to form an intelligent idea of the relative degree of virulence of pus found in the abdomen or pelvis. It may be impossible

to make a culture from the contents of a large pus tube, while the few drops of pus from a salpingitis in the other appendage are swarming with malignant pyogenous microbes. This will, in a degree, explain why some patients apparently have a greater resisting power against septic infection than other patients under what seem to be similar conditions; in the one instance the pus is practically innocuous, in the other it is actively contagious; one person may recover from rupture of a large pus cavity into the peritoneum, another may die from the rupture of a small one.

Bacteriologists in this country and in Europe have recently made frequent examinations to determine the character of the pus in tubes removed by laparotomists. Menge (*Centralblatt für Gynekologie*) examined the contents of the tube in twenty-six cases of salpingitis operated on at Berlin in August Martin's clinic. In eighteen cases the contents were absolutely sterile, while in eight cases micro-organisms were found: In two, the streptococcus pyogenes; in one, the staphylococcus pyogenes albus; in one, a saprophytic rod that was cultivated upon agar-agar; in one, a diplococcus that could be stained by Gram's method, while in but three cases was the gonococcus of Neisser found. In one instance the gonorrheal pus escaped into the peritoneal cavity and caused no specific peritonitis. Bumm claims that the specific action of the gonococcus is confined to cylinder epithelium, and that it does not invade the peritoneum; and Kock says the question is in doubt. However, we know that gonococci are found in the sac of the knee-joint, which resembles the peritoneum. If examinations were made of the pus from gonorrheal salpingitis in the early stages, the specific germ would probably be more frequently found; but the gonococcus is a sensitive organism, and its presence will seldom be demonstrated in

the abundant pus of the old abscess. In the September (1890) issue of Johns Hopkins Hospital Reports, Dr. Howard Kelly publishes a case in which Dr. Ghriskey demonstrated the presence of colonies of gonococci in the pus cells. Dr. Kelly says: "In the case in question this observation was made in the tube least affected, which microscopically scarcely seemed to contain any pus. No cocci at all were found in the large tube full of pus."

Orthmann and Westermark found the gonococcus in one case each. Probably there are cases recorded that have escaped notice. Dr. Hunter Robb (the Johns Hopkins Hospital Bulletin, March, 1892) reports a case where he removed both uterine appendages. The left tube contained a large quantity of pus, while there was but little pus in the right tube. After a careful bacteriological examination he says:

"Cultures and smear preparations made from the right fallopian tube and vermiform appendix immediately following the operation were pure cultures of the streptococcus pyogenes. Cultures taken during the operation from the pus which came from the left tube were negative."

Tait believes that the character of the pus in some pelvic abscesses is similar to that found in an ordinary cold abscess. Pathogenic microbes may be destroyed by the cellular elements and secretions of the system, by the presence of bacteria that act antagonistically toward one another, or by an autotoxic secretion that stops or retards their development. The presence of micro-organisms in all cases of fatal peritonitis has been proved by the observations and experiments of Laruelle, Bumm, Fränkel, and Predohl.

I will conclude this paper by briefly giving my method of suturing the abdominal incision, and reporting a few selected cases of abdominal sections, illustrating some of

the conditions for which the operation was done, and the immediate and subsequent results.

In selecting a method of suturing the abdominal wound we should adopt the means that will best prevent stitch or mural abscess and ventral hernia. There are other considerations, but these are the most important. Ventral hernia may occur in any case where the deep fascia is not held together until it unites firmly, and this can best be accomplished by separately suturing it. If we attempt to perfectly coapt it by the interrupted suture introduced through the thickness of the walls, the tissue included will be so constricted that there is danger of painful abscesses, and we will not accomplish what is expected. But by suturing the fascia separately the coaptation and union are perfect without the danger of abscesses from strangulation of tissue. Since I have practiced the following method I prefer it to any other, and the results have been beautiful. I use the kangaroo tendon, and with a straight or curved needle begin at the lower angle of the wound and close the peritoneum with a running stitch. The deep fascia is next closed in the same way, and then the superficial fascia and fat; the suture is now cut and the end is buried in the tissue. The skin is united by superficial silkworm-gut sutures introduced with a small curved needle. The suturing by the tendon may be done in one minute, and the silkworm gut may be quickly introduced and tied. I prefer the tendon to catgut, because it is more easily made aseptic, and will not be absorbed until union is perfect, and I use the silkworm gut because it is one of the most aseptic sutures, as has been recently emphasized by the results of the bacteriological examinations of sutures removed at the Johns Hopkins Hospital. Only one piece of tendon is used in suturing an average abdominal incision. The silk-worm gut may be removed on the fifth or sixth day, and the sur-

face will be dry and union perfect. But the buried tendon will hold the surfaces together for two or three weeks before its integrity is so impaired as to destroy its resisting power. I do not now expect to be annoyed by stitch or mural abscesses or ventral hernia. Dr. Gill Wylie and a few other operators suture the fascia separately with catgut, but the sutures tied on the surface over the incision are introduced through all the thickness of the wall. Dr. H. O. Marcy closes the wound with the buried tendon, and uses no superficial suture. His technique is beautiful and his results perfect, but the time required to close the abdomen is too long in the practice of the average abdominal surgeon. He has done more to popularize the tendon as a buried suture than any other man, and the results of his work in this line are invaluable.

DISCUSSION.

DR. T. B. GREENLEY, of West Point: I desire to make a few remarks in regard to a laparotomy wherein the operation did a good deal of good without extirpating the tumor. I had the opportunity of seeing the patient previous to the operation.

She was suffering a good deal of pain, and had to be kept under the influence of an opiate. I recommended the doctor in attendance to have an operation performed, as the tumor was evidently a large one. Of course we could not diagnose the character of it. After bi-manual examination we thought possibly it might be either a fibroid or an ovarian tumor; but there was so much tenderness in the locality of the growth that the patient could not bear manipulation, and we did not put her under anesthesia. Dr. Wathen finally operated on the case, but the adhesions were so great that it was extremely difficult to release them. The tumor was so crowded with the womb and bladder that it was impossible to free it, therefore he only released those bands that were causing the pain, then sewed her up. She remained a few weeks at the infirmary,

and since that time has been quite comfortable, has suffered no pain, and is able to be up. Dr. Wathen regarded the disease as sarcoma. The idea of giving her comfort is a great consideration.

DR. WATHEN: Dr. Greenley wishes me to explain something about the operation he refers to. I did a laparotomy, separated adhesions as thick as my hand in the pelvis, and found that the tumor was malignant. It was impossible to remove it, consequently it was left and the abdomen closed. There was one peculiarity in the case that I have never seen before. The tumor was in the adnexa of the uterus on the left side, had worked its way under the sigmoid flexure, and was growing directly over its surface; not by adhesions, for it is a common occurrence for the sigmoid flexure to be adherent to pelvic exudates. It was not under the adhesions. The growth was crowding down under the peritoneum, getting over the sigmoid flexure. I do not remember having read of a similar case in literature.

OTOLOGY: A REPORT.

By W. B. McClure M. D.
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Herodotus says there were specialists in Egypt, a certain doctor for a certain kind of disease, but no mention is made of an aurist. In fact so obscure was a knowledge of the ear in the early history of medicine, that not until the middle of the eighteenth century was its anatomy and physiology known; and not until many years later was the treatment of its many ailments reduced to any thing like an exact science. To Valsalva are we indebted for resurrecting from obscurity the most important branch of general medicine; and though his ideas and knowledge of the ear were crude, and in many instances false, yet he it was who gave to its study an impetus which continued growing and gropingly struggling till a hundred years later, when Sir William Wilde brought otology or aural surgery, as he termed this department, down from the *terra incognita* of the ancients to a point where it could be taken up and grappled with by the general practitioner.

From these wonderful researches of Wilde began an enthusiastic investigation of this hitherto benighted subject, which has extended and widened till this department of medicine is fully abreast with all of the other branches of medical science.

It is not my purpose in this report to speak specially of

all the diseases of which this Pandora's box, the ear, is subject, but to confine my remarks to the more frequent and therefore more important diseases affecting the organs of hearing.

Within the last few years a new cause has been added to the already numerous list of causes affecting the middle ear. It is now an established fact that a very large per cent of the cases of influenza, or *la grippe*, result in otitis media.

One author reports seventy-five cases of middle ear disease following *la grippe*, and of this number fifteen were catarrhal and thirty-eight purulent in character. The same author reports having seen a number of cases of mastoiditis from the same source. In my own limited experience I have never before been called upon to treat half so many ear cases as during the past twelve months.

It will thus be seen that we are just entering upon a new and important era in the field of otology. How to meet these rapidly increasing cases, and to discover, if not a prophylactic, at least a safe and successful plan of treatment, will constitute a very important part of the researches and labor of the aurist henceforth.

From what I have seen of the intensity of the inflammation of the middle ear accompanying *la grippe*, the object of our treatment should be, not only an effort to prevent the hearing of our patient becoming impaired, but a determined fight to save our patient from the fearful consequences of a violent inflammation in the tympanum, with its well-known tendency to extend either to the mastoid cells or to the brain itself. In my own experience the treatment pursued in this form of otitis media has not differed greatly from that of the same conditions from other causes. It has also been my experience that the results have not been so satisfactory as that obtained from the

same line of treatment when the condition was due to other causes; this, however, has probably been due to the existence of extreme nervous and physical exhaustion which always follows influenza.

Of the numerous diseases of the ear which the physician is called upon to treat, the one demanding the most active and energetic work is known as acute otitis media. The disease, as is well known and as its name implies, is an acute inflammation of the middle ear. There is no one exempt from this very painful malady, though it is most frequently seen in early childhood. Its earliest symptoms are pain, impairment of hearing, and bulging of the membrana tympani.

This stage, if not controlled or aborted, rapidly passes on into the stage of suppuration. The rapidity with which the inflammatory passes into the suppurative stages is sometimes wonderful, it having been known to occur within six hours of the first symptoms. It will thus be seen, that if we hope to avert the suppurative stage with its attendant evils prompt action is an absolute necessity. But unfortunately the patient is seldom seen until several hours, or in some instances days, after the onset of the disease, and to this neglect, we believe, is largely due the unfavorable results so often obtained in the treatment of suppurative otitis. The cause at first may be trivial, but its early discovery and removal is of the utmost importance.

The oft-repeated fallacy, that it is dangerous to check a discharge from the ear, or that a slight deafness will get well of itself, is often heard from the laity. It is the business of the physician, not only to discourage, but to refute such false reasoning.

The danger from neglecting an acute catarrh of the middle ear is not, as is commonly believed, a rupture of

the membrana tympani, but it is that the inflammation, if allowed to continue for any great length of time, will not only cause chronic thickening of the tympanic mucous membrane, but may extend to the surrounding parts, involving the mastoid cells, or even the brain itself. As before stated, the preservation of the integrity of the membrana tympani is not of prime importance, for in the first place, if it is ruptured, the probabilities are that it will unite again; and in the second place, if it does not unite, hearing is not necessarily seriously impaired. For it is a well-known fact that the membrana tympani is not so important an organ as was formerly believed, and that a destruction of any or all of this membrane does not necessarily mean a serious loss of hearing power. Argument is still being waged as to whether or not there exists a normal opening in the membrana tympani.

Some of our very best authors assert with warmth and positiveness that Rivini, that distinguished aural pioneer, was correct when, more than a hundred years ago, he declared that he discovered an opening, normal in appearance, in the membrana flaccida, near the handle of the malleus.

Hyrtl and others deny the existence of the Rivinian foramen. However this may be, its physiological function, if it does exist, can not be of great importance, since those who claim its existence assert that they only found it after hours of search with a powerful magnifying glass. It is extremely doubtful if we ever see a case of primary myringitis, that is a disease arising primarily from the drum membrane; but the numerous inflammations of the drum membrane are usually the result of an extension of inflammation from the surrounding parts to the membrana tympani, and rarely or never have their beginning in the membrana tympani except, perhaps, from traumatic causes.

As before indicated, I shall not in this report attempt a discussion of all the diseases met with in aural practice, but will confine myself to a discussion of a few of the most important ailments met with in every-day practice. Of these, the one of most prominent importance, not only to the general practitioner but to the specialist as well, is chronic non-suppurative inflammation of the middle ear. There is probably no disease met with in the whole category of ills affecting the human family that promises so little from treatment as does this one ailment, which involves a space no larger, perhaps, than the surface of a copper cent. In fact until very recent years no one has been bold enough to claim to be able to give any relief to this obstinate and unyielding disease. However, it has been discovered that one lack of success has been largely due to a lack of early diagnosis. This disease is so insidious, and the inflammation comes on so slowly, that the patient himself is not aware of its presence till the functions of the tympanum become so involved that an impairment of hearing warns him that something is wrong. Here I am speaking of progressive inflammation, and not one following an attack of acute inflammation, the latter of which is comparatively easily relieved. In chronic non-suppurative inflammation of the middle ear our means of diagnosis are almost wholly subjective, to the truth of which every one will testify who has looked through the otoscope in vain for some manifest cause to account for the symptoms of which our patient complains. Thus it is that the disease may have progressed for months, or even years, before the physician is consulted for a recently discovered impairment of hearing, or a slight ringing in the ears. It is probably true that if we could now be permitted to look into the tympanic cavity or the eustachian tube, we would find in one or both fibrous bands,

constrictions, or possibly plastic thickening. But, unlike the general surgeon, we are denied this boon.

If in his work he suspects a chronic inflammation in the abdominal cavity, he makes his exploration incision, goes down into that cavity and searches for an obscure cause to account for certain symptoms, and the same may be true of the thoracic cavity, and even of the cranium itself. But the aural surgeon must depend almost wholly upon the meager information drawn from a sometimes ignorant patient for a knowledge of the symptoms of one of the gravest diseases in the whole category of ailments.

This much in explanation of the difficulties under which the aurist labors.

As to treatment I have nothing new to offer, other than that laid down and followed by most aurists, viz., inflation once or twice a week, followed by medicated vapors, the best of which I believe to be iodine and camphor. We do not advise the inflation for the purpose of getting air into the tympanum only, but it should be prolonged and rather powerful, that is, of sufficient force to break up any adhesions that may be formed within the tympanum, or to forcibly dilate constricted parts, for it is in this way alone that we may hope for benefit by inflating the middle ear.

Of course we must bear in mind the sometimes weak condition of the membrana tympani resulting from disease, and not use the inflation with sufficient force to cause a rupture of that membrane. If the eustachian tube be constricted, occluded from any cause, and can not be opened by means of the air-bag, catheterization should be resorted to.

A recent plan of treatment for the relief of deafness, the result of progressive inflammation, especially when an-

chylosis of the chain of bones is suspected, is by means of massage. For this purpose a number of ingenious instruments have been devised, none of which are probably better than a simple rubber tube with a common tin funnel at the distal extremity. If tinnitus is, as is frequently the case, a distressing symptom, tenotomy of the tensor-tympani sometimes gives wonderful relief.

Of course, if there is naso-pharyngeal catarrh, or nasal obstruction, these must be corrected. The operations of Prout, Hinton, and others, upon the membrana tympani for the relief of tinnitus and other chronic affections of the ear have had their day, and are now seldom practiced.

An exception in favor of opening the membrana tympani should be made, however, when we are satisfied that there is retained mucus within the tympanum. The membrane may be punctured and the mucus washed out with decided benefit to the patient.

In addition to the sometimes fatal tendency of chronic inflammation of the middle ear, there exists a condition, or rather a symptom, that does not kill, but is capable of rendering our patient's life miserable and makes him sometimes prefer death to its continuance. I refer to tinnitus aurium.

This continuous roaring has been variously described, some liking it to the ringing of bells, others to the murmur of trees or to the hum of a tea-kettle. However, this apparent discrepancy is, I think, satisfactorily explained by Wilde, who says that the description which patients give of the noise is due to their fancy, dependent upon their walk in life, they likening it to the sounds with which they are most familiar. Thus persons from the country or rural districts draw their similitude from the objects and noises by which they have been surrounded, as the falling or rushing of water, the singing of birds, the waving of trees,

or the humming of bees, while those from the city liken it to the rolling of carriages, the hammering of machinery, etc. So disagreeable does this constant ringing, roaring, buzzing sound finally become that insanity not infrequently follows. Many cases of suicide have been reported caused by this harassing, intolerable, never-ending ringing in the ears. Dr. Roosa reports the case of an eminent college professor who consulted him on account of a distressing tinnitus aurium, and when told by Dr. Roosa that there was no relief for him, remarked that if "he felt sure that the doctor was correct in his prognosis, he would put an end to his existence," which he did a few months after, by blowing out his brains. Many similar cases have been reported. Dr. Pomeroy, of New York, examined sixty lunatics at Blackwell's Island Lunatic Asylum, and found disease of the middle ear in a number of those who suffered from aural hallucinations.

We not infrequently find in persons suffering from tinnitus aurium, a confusion of intellect, or an inability to keep up a connected line of thought. Only recently a young lady patient who is serving as a private secretary, informed me that unless she could very soon get rid of a very disagreeable ringing in her ears, she would be compelled by reason of inefficiency to give up her position.

Let us inquire into the nature of this phenomenon. Ordinary tinnitus should be distinguished from a venous murmur, transmitted from the jugular vein which runs just beneath the floor of the cavity of the tympanum, and also from the pulsating sound of the internal carotid as it winds through the apex of the petrous bone. This variety of tinnitus is not necessarily connected with impairment of hearing, but is usually due to anemia or aneurism.

The cause of the subjective form of tinnitus aurium has been much discussed, but as yet we are in ignorance

of its exact nature. We do know, however, that it is most always an accompanying symptom of chronic non-suppurative disease of the middle ear. It also occurs in inspissated cerumen. Reasoning from the nature of the disease of which it is an accompanying symptom, it is fair to conclude that it is most probably due to pressure exerted upon the vessels of the tympanum and labyrinth, or it may in a measure be due to a lack of pressure equilibrium. Of course this chronic catarrh of the middle ear usually has its origin in a pre-existing chronic inflammation in the throat.

As I have already indicated, the results gained by treatment of these cases are far from satisfactory, yet many of them are much benefited, and not a few of them cured. Many remedies have been suggested and advocated by different authors; but the condition we are discussing is merely a symptom, and of course the rational indication is, first, if possible, to remove the cause of the condition. If it be due, as it frequently is, to post-nasal catarrh, that condition should be looked after and relieved. If to proliferous inflammation of the middle ear, direct the treatment accordingly. If the eustachian tube be occluded, open it up with the catheter or Politzer's air-bag. If the external auditory canal contains hardened cerumen, remove it. If the patient be anemic, give tonics.

Of the numerous remedies suggested for internal medication, only one in my hands has given any degree of satisfaction, and that one is nitro-glycerine. It is not easy to explain how it sometimes gives relief in the very worst cases of roaring, but that it does is a well-known fact, and only recently I have seen one case entirely relieved by its use alone. It is most probably in those cases of relaxed condition of not only the mucous membrane of the tympanum but of the arterioles; and the effect of the nitro-glyc-

erine on the muscular coating of the arteries gives better blood pressure, and lessens any friction that may exist in the flow of blood through the middle ear.

In conclusion, when we contrast our present advanced knowledge of aural work with that before the days of Wilde, we may conclude that a new era in this department is beginning to dawn upon us, and we believe that ere long this field of work will be fully abreast with those in other departments of medicine.

DISCUSSION.

DR. M. F. COOMES, of Louisville: I heard only that portion of the paper, Mr. President, which the doctor has just read concerning tinnitus aurium producing insanity, derangement of the mental faculties, etc. In nearly twenty years' practice I have never found a patient so mentally disturbed from tinnitus aurium as to incapacitate him. I believe many of the complaints associated with defective memory, and so on, connected with tinnitus aurium are due to hysteria and mental depression. These people are in a depraved condition physically; they suffer from debility.

Tinnitus plays an active part so far as it is connected with chronic inflammations of the middle ear. Tinnitus is incurable, unless you succeed in curing the chronically inflamed middle ear. It is an exceedingly annoying affection to treat. I think there is very little danger of loss of life or destruction of the mental faculties. I do not know that I am exactly right in criticising the gentleman's paper in this manner, but what I heard of it led me to infer that in some cases the individuals might lose their mental faculties and become deranged as a result of tinnitus aurium. If the gentleman made this statement, I certainly think that if he will look up the statistics he will find that there are few cases, if any, that can be attributed to this cause.

DR. S. G. DABNEY: I have listened to the paper with a great deal of interest, and I regret that the doctor did not touch upon some points which are of interest to all of us. He

says nothing in regard to excision of the membrana tympani and ossicles in excessive tinnitus and long-standing suppuration. The operation mentioned is one of the most radical and recent procedures in aural surgery, yet it has so far found few advocates, but those few claim marvelous results. I have not seen any of the cases, and shall be glad to hear what his experience has been.

With regard to the otitis that follows influenza, I differ a little with him in regard to treatment. He says he has not found that it required any modification of the usual line of treatment. In my observation some modification has been required, owing to the excessive depression that characterizes *la grippe* elsewhere. I have found such cases very intractable, but after a long course of treatment yielding to remedies. The most notable characteristics in otitis following influenza, in my experience, have been great depression and pain.

The essayist spoke of a normal opening in the membrana tympani. It is a matter of interest to know that one of the most distinguished aurists of America, Dr. Roosa, has a normal opening in his own membrana tympani. He is conscious of it. It is not the result of disease, nor has he ever suffered from any condition of the ear that has produced it.

As to injections in the middle ear, in my judgment that line of treatment is on the wane. The injection of iodoform or any other fluid in the middle ear is gradually losing ground.

The auriscope, the apparatus suggested by Dr. Lewis, is used; also massage, the artificial movement of the ossicles, exhausting air in the auditory canal by suction with a little rubber tube, washing the contracted membrane; in the meanwhile there closes a covered disk. Catheterization is a point the doctor touched upon. My experience in cases in which the eustachian tube is absolutely impervious to air by the Politzer bag or catheter is rare. I find these cases exist only in the beginning of acute catarrhal troubles, when the swelling of the eustachian tube is such as to cause obstruction. I find by waiting a few days the swelling subsides, the tube becomes pervious, and use of the eustachian bougie is not necessary.

DR. W. B. MCCLURE: I would say that I did not indorse the former method of injecting fluids into the middle ear. I do not use fluids, but sometimes use vapor of iodine or camphor.

As to the point raised by Dr. Coomes with reference to the results of tinnitus aurium, he questions the statement, and says that it seems almost impossible that it could result in insanity. I simply have to report the case reported by Dr. Roosa, a professor who took his own life when he was informed that his case of tinnitus could not be relieved, that it was so distressing. The man could not have been in sound mind.

LARYNGOLOGY: A REPORT.

By Thomas Hunt Stucky, M. D.
Louisville, Ky.

While gathering the material from which to make the report on laryngology, nothing has so impressed me as the increasing aversion for tracheotomy and the substitution for it of the much safer operation of intubation. It may be interesting here to review a letter read at a recent meeting of the Missouri Valley Medical Society, at Omaha, by Dr. Inches, of Scribner, from his former class-mate, Dr. O'Dwyer, regarding the operation of intubation. In this letter Dr. O'Dwyer gives the views he at present entertains regarding the operation of which he is the father. He states that intubation, like every new thing, has been much abused, and that it is a difficult operation to perform because of the celerity with which it must be done. The necessary skill can only be acquired by a great amount of practice on the cadaver. Unless this be done much suffering will be caused and many lives sacrificed. For these reasons the doctor is of the opinion that the operation should not be attempted by those inexperienced in its technique, and believes that one intubationist in a city of fifty thousand is sufficient. Regarding the indication for the operation Dr. O'Dwyer says that, should death be impending from obstruction in the larynx, and should one competent to perform intubation be at hand, it should be done, otherwise tracheotomy is to be preferred as the safer of the two.

He further states that intubation will accomplish all that tracheotomy will and a great deal more, but that tracheotomy may be called for after intubation has failed, should loose membrane exist in the lower part of the trachea. As a primary operation in croup, when an intubationist is at hand, Dr. O'Dwyer regards tracheotomy as absolutely unjustifiable.

Ranke (*Centrlbl. Chir.*, March 7, 1891) reports 364 cases of intubation in diphtheritic croup. Of these, 132, or 36 per cent, ended in recovery. Among 849 cases of tracheotomy, 39 per cent ended in recovery.

It is found that in very young subjects, in whom tracheotomy is frequently fatal, intubation is more successful. Pneumonia is less common after intubation than after tracheotomy.

Jacques (*Rev. mens. dis. mal. de l'enfrance*, January, 1891) approves of intubation, and quotes from Waxam and Northrup the following advantages:

1. It is as efficient as tracheotomy in relieving the dyspnea.

2. There are no objections on the part of parents and friends as in tracheotomy.

3. The operation is comparatively easy and simple, and presents neither danger nor shock.

4. Anesthetics are not necessary, neither are skilled assistants.

5. No wound is added to the patient's suffering, to become a source of new infection.

6. Less irritation results from the tube than from the cannula, because the tube is smaller than the trachea, and is so shaped that it presses only upon the glottis.

7. Expectoration is easier with the tube than with the cannula.

8. In the case of the tube the air reaches the lungs moist and warm, thus lessening the danger of pneumonia.

9. The operation is not bloody, a decided advantage in the case of a weakened child.

10. It is more rapid and presents fewer dangers than tracheotomy.

11. Convalescence is more rapid, for there is no wound to heal.

12. The patient does not require the assiduous and continuous care of the physician, as in tracheotomy.

13. It does not prevent tracheotomy, and if that operation is required, the tube will furnish a useful guide.

14. Intubation leaves no scar.

15. In mild cases, in which treatment is required for but a short time, it is of special value.

Pauli (*Therap. Monatsch.*, January, 1891) is one of the few who prefer tracheotomy to intubation. He acknowledges the advantages of intubation, but thinks the after-treatment presents difficulties that more than counterbalance them. In his experience the tube has sometimes been blocked up and has even slipped into the trachea, and has frequently been coughed up. Ulcerations have formed about the tube also, and feeding has been a matter of much difficulty. Pneumonia has occurred more often than after tracheotomy. He performs intubation only when tracheotomy is refused by the parents.

Dr. J. Mount Bleyer, of New York City, gives, in the Archives of Pediatrics, an analysis of 512 cases of intubation with the following results: Out of 251 cases of children under three years of age there were 73 recoveries, and in 260 cases, three years of age and over, there were 115 recoveries; total, 189 cases of 512 operated upon. The causes of death are given throughout. The greatest number died from diphtheritic bronchitis, 67; bronchitis, 45; pneumonia, 41; broncho-pneumonia, 40; sepsis, 39; heart failure, 21; exhaustion, 20; double pneumonia, 16, and membranous croup, 12.

Dr. Walter B. Johnson, of Patterson, reports eighteen cases of intubation of the larynx. The cases in which he performed the operation occurred during the seven months, commencing with July, 1890, the severer part of the epidemic at Patterson. This accounts for the fact that only three of eighteen recovered—although in all there was very gratifying relief from dyspnea.

Dr. Ranke, writing in *Munchener Medicinische Wochenschrift*, says that intubation is to be preferred during the first year of life, but that tracheotomy gives better results in older children. He considers the risk of intubation less than that of tracheotomy, if proper tubes are carefully used. The number of cases upon which he bases his comparison is rather small, and the difference in favor of tracheotomy is slight.

If, in a case of intubation, it is impossible to remove the tube in eight or ten days, he advises that the operation of tracheotomy be performed.

Waxham, of Chicago (Archives of Pediatrics, July, 1891), reports some statistics of intubation. He has collected 343 cases operated on, ranging from under one year to sixty years of age, with 123 recoveries, showing 35.85 per cent recoveries.

In reply to an inquiry of the local profession as to the number of intubations performed, I have received the following:

Pusey has performed 55 intubations with 23 recoveries; Cheatham, 54 intubations with 22 recoveries; Ray reports 21 cases with 8 recoveries; Evans and Taylor have each operated 11 times, and each reports 5 recoveries.

Counting all the cases reported in this report, we have 1,389 with 510 recoveries, giving 35.92 per cent of recoveries. We have not a similar number of tracheotomies in this report to compare, but the number of cases collected

show a better percentage of recoveries. Not in all cases where tracheotomy is called for is intubation applicable; nor is it justifiable to perform tracheotomy in those cases where intubation suffices. Then, can we select either operation with disregard for the other? If so, which of the operations is to be preferred? These are the questions we wish to discuss.

Richard B. Faulkner, of Alleghany, Penn., has made inquiry of the profession at large concerning intubation, and presents a startling array of opinion against the operation. In reply to his question, Do you think intubation will be able to hold its own as a resort in diphtheria? D. Hays Agnew answered tersely, "I do not;" Thomas G. Morton, "No;" H. Tuholske, "I do not think so;" Louis Starr, "Not in severe cases;" John Ashhurst, jr., "It will never supplant tracheotomy, and I am disposed to think that it will be less often resorted to in the future than it is at present;" A. C. Bernays, "I do not think that intubation will prove successful in diphtheria;" R. W. Lovett, "I do not believe that intubation will hold its own when contrasted with tracheotomy in severe cases of laryngeal diphtheria;" C. H. Mastin, "It has not stood the test, and I am certain it will fall into disuse. It has always appeared to me as a most unsurgical procedure, and one that I have always opposed."

This is certainly a collection of opinions of brilliant thinkers, and such disregard shown an operation that has yielded such encouraging results, some operators reporting over forty-one per cent of recoveries, is surprising, to say the least. In striking contrast to this war of operations stands the eminent authority, Jacobi, who has discarded both intubation and tracheotomy and relies solely upon mercurials.

New Instruments and Therapeutics. The past year and

the present one have both brought to notice many new instruments and improvements upon old ones. Much ground has been gained also in therapeutics. Many drugs and therapeutical procedures have been dropped for newer implements with which to wage the warfare against disease. Some old procedures have been revived for fresh trial by the search of advancing science that digs in the past as well as dips into the future. Jarvis has modified his nasal ecraseur, making it much more convenient to handle. Edigi has given us a hollow obturator for the solid one of O'Dwyer. Gottstein, Delavan, Holden, and Hinkle have each added new instruments to the many now in use for the removal of adenoid vegetations from the vault of the pharynx. Roe and Chappell have presented us with new devices for removing hypertrophied tissue from the base of the tongue, and Seibert has given us another agent, and an instrument with which to use it, in the treatment of diphtheria. His chlorine water, introduced under the mucous membrane by the many-needled syringe, is receiving a trial by the thirsty profession. Strouse offers a new spray-tube, Mulhall a modification of Mackenzie's laryngeal forceps; Asch presents us with a new snare; White a double nasal spray and vaporizer, and Myles a nasal clipper. Lactic acid, used a few years ago as a local application in tubercular laryngitis, has been revived by some members of the profession, among them C. R. Weed, who reports in the New York Medical Journal of January 9, 1892, three cases in which he claims very favorable results.

To enable a vocalist to sing when affected with subacute laryngitis is at times an important matter, says Faulkner, and he, while admitting the prudence of rest, appreciates the importance of treatment under pressing engagements. In these cases he is in the habit of first giving a laxative; then using a one-per-cent spray of cocaine accompanied by

aconite and aromatic spirits of ammonia internally, and a lozenge several times daily containing bimeconate of morphine, hydrochlorate of cocaine, tr. aconite, and althæ root. In the morning of the day on which the patient is to sing, the sixtieth of a grain of strychnine is administered after breakfast, the same after the noonday meal, and in the evening after luncheon, and before departing for the concert the twentieth to the thirtieth of a grain.

A method worth mentioning, as there may be some physicians to whom the idea has not occurred, is proposed by F. A. Burrall, of New York City, for the more thorough spraying of the posterior and anterior nasal cavities: Direct the patient to inhale deeply, and place the tip of the atomizer behind the uvula without touching the posterior pharyngeal wall. Then the patient is to close his lips upon the tube and exhale through the nose. This carries the spray well forward upon the walls of the nasal cavities.

DISCUSSION.

DR. J. H. LETCHER, of Henderson: I regret to notice that the members are so dilatory in discussing the paper which has just been read by Dr. Stucky, in which he dwells upon the relative merits of intubation and tracheotomy, because it is an important subject and one that we will all have to deal with. The doctor quotes the statistics of Dr. Richard B. Faulkner, of Alleghany, Pennsylvania, who, I believe, is a general surgeon. It has been my experience that intubation has been done a great deal by laryngologists who devote their time exclusively to throat troubles, hence I do not believe that the testimony given by Dr. Faulkner should make a marked impression on us. The men he has quoted are largely general surgeons, and naturally we should not expect them to look kindly upon an operation that is done so much at the present time. The doctor has said it will be impossible for intubation to take the place of tracheotomy. It is an operation that has

come to stay, but I doubt whether it will be used as much in the future as in the past, yet it has a place. While we can do intubation, it does not prevent tracheotomy with the knife. My experience in operating on three cases leads me to favor tracheotomy; but these cases have not been fair ones upon which to judge the relative merits of the two operations. The patients have been some distance from home, and all of them in a bad condition.

DR. T. H. STUCKY, in closing the discussion, said: My object in quoting the statements commented upon by Dr. Letcher was simply to show the apparent disfavor with which the average surgeon seems to hold the operation of intubation. That it has come to stay there is no question; that it will supplant tracheotomy, no one will say; but that there is a large class of cases in which intubation is indicated and tracheotomy not, no one will deny.

The question of when to do these operations and in exactly what class of cases seems to be the one to decide. Every general practitioner knows he will frequently come in contact with patients who will positively forbid the opening of the throat; that they see the extreme condition of the little patient, they recognize the nearness of death, and the very fact of an operation they abhor. But the introduction of a tube in skillful hands by one familiar with the operation, and with the great relief that seems to follow a fresh breath, makes it at least a great palliative measure, and if it were nothing more than this, its use would be a blessing. But in truth, in saving life it makes as good if not a better showing than tracheotomy.

ANTISEPSIS IN OPHTHALMOLOGY.

By S. G. DABNEY, M. D.
Louisville, Ky.

We are told by Dr. Knapp that in 1871 he made a visit to Edinburgh with the special purpose of acquainting himself with Lister's method, and that when he asked Lister whether this method would be productive of much benefit in ophthalmic practice, he replied in the negative. The small field of operation, the protection afforded by the lids, the antiseptic lachrymal secretion, and the usually simple instruments employed, all combined to render the danger of infection less in operations upon the eye than in most other parts of the body. Nevertheless, almost every ophthalmic surgeon would now feel that he was subjecting his patient to an additional element of danger by neglecting antiseptics, or at least careful asepsis, in every surgical procedure; moreover, the successful treatment of many diseases of the eye rests on a knowledge of their infectious character and the proper application of antiseptic agents. I wish, therefore, to briefly call attention to antisepsis in ophthalmology, first, in its application to operations on the eye and its appendages, and secondly, in the treatment of ocular disease.

Strictly speaking, we aim rather at asepsis than at antisepsis in ophthalmic surgery. Before any operation on the eye or the lids, the parts should be very carefully cleansed with hot water and with a 1–4,000 solution of bichloride of

mercury. Especial attention should be given to cleansing the lids near their margins, as Weeks has shown that this locality is a favorite lurking-place for pathogenic germs. A solution of the bichloride of the strength indicated will not usually be found irritating, but in case of extraction of cataract this drug has caused opacity of the cornea, and by many a four-per-cent solution of boracic acid is preferred. The investigations of Weeks show this drug to be almost without effect on the staphlylococcus pyogenes aureus, but it is still largely used in ophthalmic practice.

To cleanse instruments boiling water is the very best agent. According to Gerster the liability to rust may be removed by adding common soda, a tablespoonful to the quart. A solution of carbolic acid strong enough to be a speedy and certain antiseptic is disagreeable to the surgeon's hands, and bichloride of mercury to be efficient would be likely to injure the instruments, hence the superiority of hot water.

During the progress of an operation where considerable dissection of the tissues is required, as occasionally in muscular advancement and plastic operation, the parts should be frequently irrigated with a solution of bichloride of about 1–4,000.

As regards the surgeon's hands, thorough cleansing with hot water, soap, and nail-brush is alone sufficient, but additional precaution may be obtained by immersion in a solution of the bichloride of mercury, preferably 1–1,000. In cataract operations it is the custom of some operators to wash out the anterior chamber, thus removing any remaining cortical fragments with a boracic-acid solution; but in general it is safer to accomplish this end by gentle pressure, milking out with an instrument applied to the lower part of the cornea. Knapp warns against using the edge of the upper lid to make counter-pressure on the wound, as he

considers this a dangerous source of infection. After operating for stricture of the lachrymal duct it is well to inject through it a solution of bichloride of the strength above indicated.

As regards the dressing after an operation, it may be very simple. A little lint smeared with vaseline is laid over the closed lids, and upon this a layer of absorbent cotton soaked in the solution of the bichloride, and finally a little dry absorbent cotton to fill out the orbit, the whole held in place either by strips of adhesive plaster or a roller bandage. For my own part, after using the adhesive plaster dressings for several years, I have returned to the roller bandage, as I find this more comfortable to the patient and to more thoroughly steady the eye.

It is not wise to put the bichloride dressing immediately next the skin, as a very disagreeable erythema is often so produced. The presence of diabetes mellitus probably increases the dangers of suppuration after an operation in the eye as elsewhere, and yet the statistics of removal of diabetic cataract do not show any greatly excessive number of suppurative cases. Of course the diabetes should be reduced as much as possible before the operation. Careful examination of the tear-sac should be made before any operation on the eye-ball. A chronic dacro-cystitis is a most dangerous source of infection in such cases.

It is a remarkable fact that the apparently simple operation of needling for capsular cataract, even when performed with every antiseptic precaution, is sometimes followed by suppuration. Knapp accounts for this on the theory of latent pyogenic germs in the eye being excited to activity by this second operation. I have seen no cases in my own practice as yet.

The prophylactic treatment of sympathetic ophthalmia by injection of a solution of bichloride of mercury into the

eye, as suggested by Abadie, has not, so far as I know, found any advocates in this country.

It is, however, in the treatment of corneal and conjunctival disease that antiseptic remedies are of the greatest value in ophthalmology.

First in importance here, because in my experience first in its efficacy, I would place the actual cautery in the treatment of suppurating ulcers of the cornea, especially that form known as ulcus serpens. I have found this treatment infinitely superior to any other in this disease. At my clinic at the Hospital College I have on several occasions simply cauterized the ulcer once with the red-hot probe, prescribed the instillation of eserine sulphate and the application of a hot solution of the bichloride at home, and been rewarded a few days later by seeing the eye far on the road to recovery. The application of a four-per-cent solution of cocaine renders the burning painless.

Next in its value and of wider application is nitrate of silver, a remedy long used with great success in diseases of the eye, and also, like every other powerful agent, liable to most dangerous and disastrous misapplication. According to the bacteriological experiments of Weeks, one-per-cent solution of nitrate of silver is a most speedy and certain destroyer of the staphylococcus pyogenes aureus, and presumably of the gonococcus of Neisser also; hence arises the great value of this drug in suppurative conjunctivitis.

The bichloride of mercury solution, from 1–5,000 to 1–10,000, is also of frequent advantage in suppurative ophthalmias and in ulcers of the cornea. I prefer it in cases of inflammation of the tear-sac. The solution should be passed into and, if possible, through the sac into the nose with the lachrymal syringe after slitting the canaliculus. It is in disease of the tear-sac, and scarcely anywhere else, that pyoktanin still finds some use in ophthalmology. A

solution of 1–1,000 is a safe antiseptic, but after a trial of it in several cases I do not believe it to be at all superior to the bichloride. This aniline dye, for which such extravagant claims were advanced a few years ago by Stilling, of Strassburg, and which for a time found a wide application both in solution and in solid stick, and even as an intra-ocular injection, has almost lost its place in ophthalmology, and except in tear-sac disease, and by some in ulcers of the cornea, is rarely used.

The peroxide of hydrogen, too, has but a limited field of usefulness in ocular disease. It may be used to advantage in purulent dacro-cystitis; but, if strong enough to be efficient, it will be painful and irritating to the eye, and hence should be preceded by an application of cocaine. Where there is an ulcer of the cornea with purulent base and edges the bubbling peroxide beautifully outlines the ulceration; but in my experience it is not nearly so valuable an application here as the actual cautery.

In certain forms of phlyctenular ophthalmia the dusting of calomel on the phlyctenulæ is a most valuable local treatment. Since Weeks has shown that calomel has a high rank as an antiseptic, we may probably account for its action in such cases on this ground. The yellow oxide of mercury salve is valuable in the same way. The oil of cade is a useful application in many cases of marginal blepharitis, and it too is an antiseptic of decided strength.

DISCUSSION.

Dr. John A. Larrabee, of Louisville: I rise to ask one question. The doctor, in his paper, in discussing the application of nitrate of silver gave great credit to the old-time remedy, and wound up with the statement that it might become highly dangerous. I think if there is any thing in the profession in which we, as medical men, are like a flock of sheep, it

is in the matter of therapeutics. If one makes a break over the wall, we all follow. Somebody has said that nitrate of silver was dangerous to the eye. Nobody knows why. This is the nucleus for his therapeutics. It leaves a sting there that might become highly dangerous. I rise to ask whether nitrate of silver put in the eye can become dangerous? I am aware the caustics will do it; but I am not aware that nitrate of silver in any solution, of from ten, twenty, or thirty grains, can become a caustic until it has had its effect upon the albuminous tissue or the chlorides that are present. In not going beneath the surface, but coagulating upon it, it differs entirely from the copper and other preparations used. I can not see why this danger is spoken of with so great fear, while other agents that are truly caustic are used with impunity in diseases of the eye.

DR. S. G. DABNEY: Preliminary to the application of nitrate of silver, a careful examination of the cornea should be made to see that there are no ulcers there, and that there is no inflammation of the iris. Inflammations of the iris complicate the external inflammation of the eye, and in that class of cases the application of nitrate of silver would be most dangerous. It would certainly increase the iritis. In ulcers of the cornea a solution of nitrate of silver not only retards the effect of the ulcers of the eye, but the eyeball itself is likely to take on a deposit in the ulcer more or less difficult to reach. Before the application of nitrate of silver the cornea should be carefully examined; this is especially important in cases of ophthalmia neonatorum. Those cases in which it is hard to examine the cornea, it is difficult to separate the lids to get a view of the granular surface.

DR. LARRABEE: Are not those the cases in which nitrate of silver is beneficial?

DR. DABNEY: In ophthalmia neonatorum without corneal involvement I think it is the best agent we can use. I notice in the report of the Presbyterian Eye and Throat Hospital by Dr. Chisholm, that his treatment for ophthalmia neonatorum consists in dropping a solution of nitrate of silver into the eyes of children every day, and they are brought to the hospital for this purpose daily. At home the eye is cleansed with a solution of boric acid.

THE ETIOLOGY OF CROUPOUS PNEUMONIA.*

By Simon Flexner, M. D.
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The view entertained by some of the older clinicians, that croupous pneumonia is not to be regarded as a purely local inflammatory affection, but that it presents the features of a general infectious disease, has received full confirmation in the last ten years. The study of croupous pneumonia, with the aid of modern bacteriological methods, has furnished us with the peculiar micro-organism constantly associated with this disease and now believed to be the causative agent concerned in its production; and observations on and experiments with this organism cultivated outside the human body have supplied us with a knowledge of many important properties possessed by it. Moreover, we have been afforded an insight into the nature of croupous pneumonia, as it is encountered in human beings, of great practical value.

This paper is intended to present in brief form the present status of the micro-organism believed to be the cause of croupous pneumonia; to describe its most salient features; to treat the lesions which occur in the tissues in consequence of the entrance and multiplication of the organism in the body (whether human or animal, natural or experimental), and finally, to consider the question of the cure of the disease and the production of immunity. On account of its extent all parts of the subject can be treated with the

*The Marvin prize was awarded the author of this paper.

same fullness, and in dealing with the subject the greatest stress will be laid upon that portion of the paper which is a record of the most recent contributions to it, and also the observations of the writer.

It is a matter of historical interest to recall that as early as 1875 Klebs described certain micro-organisms, which he had obtained from croupous pneumonia, as "Monas pulmonalis." The methods employed for obtaining and studying such organisms at that time were necessarily imperfect, and hence no other value attaches itself to the discovery. Eberth, in 1880, saw in the tissues from a case of pneumonia certain organisms which he described as occurring in pairs; and he found what appeared to be the same forms in the purulent meningitis which complicated the case. Koch, in 1881, photographed diplococci which he obtained from the lung in pneumonia complicating relapsing fever. Friedlander, in 1883, described his well-known bacillus, which he obtained from a small number of cases of croupous pneumonia, and which he regarded as the cause of the disease. As this organism is now known to occur exceptionally only in croupous pneumonia, and its causative rôle is denied altogether by many competent bacteriologists, nothing more need be said of it here.

The micro-organism constantly associated with croupous pneumonia was first seen and studied by Sternberg in 1880, although its significance was not appreciated by him at that time. The first published description of it was by Pasteur, who found it in the saliva of a child suffering from hydrophobia. It was not until 1885 that Steinberg, in an address before the Philadelphia Pathological Society, said: "It seems extremely probable that this micrococcus is concerned in the etiology of croupous pneumonia. . . . But this can not be considered as definitely settled by the experiments which have thus far been made upon the lower

animals." A few months later A. Fraenkel observed in the expectoration of patients with lung affections, and especially in the rusty sputum of croupous pneumonia, peculiar organisms which proved to be pathogenic for various animals. Fraenkel succeeded a little later in obtaining pure cultures of these organisms from the hepatized lungs of persons dead of pneumonia, and he stated that they probably were the causal agent of this disease. The organism has received a number of names: *Microbe septicemique du salive* (Pasteur); *Coccus lanceole* (Talamon); *Micrococcus Pasteuri* (Sternberg); *Pneumococcus* of Fraenkel; *Diplococcus pneumoniæ* (Weichselbaum); *Bacillus salivarius septicus* (Flugge); *Streptococcus lanceolatus Pasteuri* (Gamaleia), and Sternberg has just proposed for general adoption the designation "*Micrococcus pneumoniæ cruposæ*."

At the present time it would seem to be superfluous to give all the arguments which could be adduced to prove that the diplococcus pneumoniæ is the cause of acute lobar pneumonia. Suffice it to say that the postulates of Koch have been fulfilled in this instance as completely as it is possible to do so in a disease which is unknown among the lower animals, and in man it is evident that experimental inoculations can not be practiced. The diplococcus pneumoniæ is invariably associated with acute lobar pneumonia; it can be obtained from the local lesions of the disease in the lungs, and from many of the recognized complications of the disease; it can be cultivated outside of the body; but so far no opportunity has been afforded for the demonstration in man of the remaining postulate of Koch, the reproduction of the disease by inoculation.

The peculiar susceptibility of the lower animals used for experiment, such as the mouse, rabbit, and guinea-pig, to inoculation with the diplococcus pneumoniæ does not lead to a localized infection with secondary involvement of other

organs as in man, but to an acute septicemia, from which the animals rapidly perish. But it is to be noted that this organism displays different degrees of virulence, and the course of the infection occurring in rabbits is subject to certain modifications which make the resemblance to the human disease more evident. Before taking up this subject in more detail, a few words about the organisms themselves.

The diplococcus pneumoniæ occurs in the form of oval or lancet-shaped diplococci, sometimes seen singly, and not infrequently in short chains of either five or six. The single cocci, diplococci, or short chains are surrounded by a capsule, which consists of a highly refractive material having some resemblance to mucin. This capsule is present only when the organisms have been obtained directly from the body, and never occurs in artificial cultivations. These organisms demand the most carefully prepared culture media in order that they may be grown outside the body, and they are so little adapted to this mode of existence that it is only after several generations of saprophytic development that they show an abundant growth in our culture tubes. The duration of life of the organisms in culture is very short; they may be dead after two days, and hardly ever survive ten days without transplantation or inoculation of animals. But what particularly characterizes this organism is its variable virulence. A highly virulent organism may suddenly lose its effect wholly or in part, and a less virulent organism may become intensified by being passed through the bodies of susceptible animals.

According to the observations of Netter, the diplococcus is an inhabitant of the oral cavity of at least twenty per cent of healthy persons, and is present in many of these cases possessing great virulence. This fact is in accordance with what we know concerning the sudden development of

the disease after exposure or other debilitating influences, and we can imagine conditions in which the organisms shall obtain a foothold in the body on account of increased virulence on their part without demonstrable diminution of resistance on the part of the host. With reference to the contagiousness of the disease the well-known occurrence of house epidemics is to be considered.

If a rabbit be inoculated subcutaneously with a pure culture of the diplococcus pneumoniæ of virulent nature, there will be little or no local reaction at the seat of inoculation; but a general infection will ensue, and the animal may die in twelve hours, although twenty-four hours is more usual; and cultures that kill rabbits in forty-eight hours possess great virulence. At the autopsy the blood will be found teeming with bacteria, the spleen will be swollen, the lymphatic glands enlarged and hemorrhagic, the liver and kidneys cloudy and swollen; in a word, the picture of an acute septicemia will be presented. If the culture has been less virulent, the period of incubation, measured by the duration of life, will have been longer; fewer organisms will be present in the blood, and the general changes will be less severe. In this class of cases it is not uncommon to have an entirely new set of phenomena appear, namely, an acute fibrinous inflammation of the serous surfaces of the body. Instead of a vigorous general process, there is an acute fibrinous peritonitis, pleuritis, or pericarditis; and with the pleuritis actual consolidation of the lungs may occur. But whereas fewer bacteria are found in the blood in these cases, the exudate will be crowded with them. In still another set of cases the process remains localized to the seat of inoculation; an abscess is formed, which may extend into the adjacent tissues, and the animals ultimately die, or recovery may take place after a long illness. In the last cases, even though the animal die, few or no organisms

are found in the blood, while the local process still contains them. In all cases the production of fever is the earliest, as it is a constant accompaniment of the inoculation.

We will turn our attention now to the pathological changes found in the lungs and other organs in human beings in croupous pneumonia, and compare these with the alterations present in rabbits dead of the experimental disease, and consider the confirmation of the causative part played by the diplococcus as indicated by this comparison. Acute lobar pneumonia, or croupous pneumonia, is a disease in which the parenchyma of the lungs, the air vesicles, infundibula and terminal bronchioles are affected. The larger bronchi are unaffected, and the interstitial lung tissue nearly so. The disease is characterized by congestion, the transudation of serum from the blood-vessels, the diapedesis of red-blood corpuscles, the migration of large numbers of leucocytes, and the coagulation of a part of the exuded plasma with the production of fibrin. These structures serve to fill the air vesicles and other structures mentioned. In most cases the local disease is limited to the lungs, the blood does not contain the organisms causing it, and the other organs of the body do not suffer on account of the presence of the organisms themselves within them.

There are other cases, however, in which certain complications occur, such as peritonitis, pericarditis, endocarditis, and meningitis, and the organisms are found in the exudate in the affected parts. We have seen that where similar conditions occurred in animals it was an evidence of lessened virulence on the part of the producing organisms, and experiment has taught us that the diplococci which are contained in the inflammatory exudates which sometimes complicate croupous pneumonia are not so virulent as those found in the lungs. There is a variety of croupous pneumonia, the asthenic type, in which either

because of diminished vitality on the part of the patient, or extraordinary virulence of the organisms, the blood is invaded by the bacteria.

We are prepared then for the statement that there is no essential difference in the pathological changes provoked by the diplococcus pneumoniæ in lower animals, and the natural disease occurring in man in consequence of the entrance and multiplication of this organism in the lungs. Moreover, when the finer changes are studied, as they occur in the tissues of both man and animals dead of pneumonia, a further confirmation of the identity of the two processes is obtained. The study of the organs obtained from human beings and animals which have succumbed to the diplococcus infection, which I wish to report, is not yet completed. But sufficient has already been learned to warrant the statement that they have much in common.

The source of the organisms which have been used in the experimental part of this study were (1) from the rusty sputum of pneumonic patients; (2) from the lungs of those dead of pneumonia; (3) from the pericardial exudate in acute fibrinous pericarditis complicating pneumonia. The gross anatomical lesions which were observed differed somewhat, depending on the virulence of the organisms inoculated, in compliance with the description already given of the several types of the experimental affection. The most virulent cultures used did not kill rabbits in less than forty-eight hours. Yet in these cases the process was general in nature. There was a slight reaction only at the seat of inoculation. In the small purulent focus, however, the characteristic diplococci were found. (Welch.) Around the seat of inoculation the tissues were edematous, there were subcutaneous hemorrhages, and the glands in the inguinal and axillary regions were greatly swollen and ecchemotic. On the side opposite the inoculation the glands were not

so much affected. The peritoneal cavity in these cases presented no remarkable appearance, neither did the pleural cavity. The liver and kidneys were congested and cloudy. Besides the simple parenchymatous alterations the liver exhibited here and there on its surface yellowish-white lines and dots, often surrounded by a zone of hyperemia, and extending into the substance of the organ. The spleen was enlarged, sometimes greatly so, and was either soft or hard. The lungs showed areas of congestion at times, but no consolidation. The deeper glands of the neck and elsewhere were swollen and reddened; the heart apparently was normal. The blood in these cases contained myriads of organisms; the spleen and other organs and even the bile contained them.

The next series of cases, corresponding to a weaker activity on the part of the diplococci, occasioned in some instances peritonitis, pleuritis, and pericarditis. In other instances the duration of life of the animal was prolonged without the serous inflammation ensuing. The lesions in these cases differed from those stated above only in being less intense, and the largest numbers of organisms were present in the local exudation. In the last class of cases there was no general infection of the body; the serous surfaces were not involved, but the process remained localized to the seat of inoculation, producing there an exudation containing the same elements as those found in the lungs in human pneumonia, and the organisms were recovered from the local inflammatory focus. (Welch.)

The microscopical lesions will be described briefly; and as they are much the same in different cases, varying in degree chiefly, one type only will be given.

The Lymphatic Apparatus. The blood-vessels contain numerous diplococci, and masses of them are present in the tissues. There is hyperplasia of the lymphatic tissue,

and hemorrhages into the glands are observed. There is, besides, necrosis of lymphatic elements; the nuclei of the necrotic cells have suffered fragmentation, and there is a tendency of the process of cell death to be focal in nature.

The Lungs. In the cases of septicemia infection these organs show but little besides circumscribed hemorrhage and the presence of large numbers of the diplococci. In the less virulent types there may be areas of consolidation, with the presence of leucocytes, fibrin, and red-blood corpuscles. If the organisms be injected directly into the lung substance, or introduced into the trachea, actual consolidation often results.

The Heart. In all cases a marked and in some instances an extreme fatty degeneration of the myocardium is encountered.

The Liver. The organ is full of blood, and the liver cells highly granular and fatty. The yellowish-white foci, seen with the naked eye, are observed to be areas in which the liver cells are dead. The liver cells composing these areas are hyaline in appearance; they are without nuclei, and the refraction of the tissue is increased in these places, Many polynuclear leucocytes are found to have wandered into these foci of dead liver cells, and of these not a few have themselves undergone necrosis. The capillaries of the liver contain the organisms.

The Spleen. In many respects the changes in this organ are the same as in the lymph glands. There has been a hyperplasia of lymphatic tissue, but the swelling is chiefly due to the dilatation of the blood-vessels which are gorged with blood, and the hemorrhage which has taken place in the tissues. A necrosis of cells, such as is observed in the lymph glands, is met with here also. The diplococci are present.

The Kidneys. In all cases the epithelium of the tubules has suffered degenerative changes; it is swollen, granular, and often fatty. The glomeruli show a more important change, although not in every case. The glomerular capillaries are seen to be highly refractive, and the lumen of the capillaries is apparently filled by a hyaline substance, which stains in a manner indicative of fibrin. If now an attempt be made to inject these glomeruli they will be found to be entirely impermeable, and it is probable that hyaline thrombi, composed of fibrin or an allied substance, occupy the lumen of the capillaries. The peculiar organisms are found in the tissues.

It will be observed that well-marked lesions are found in various organs in the body in consequence of the inoculation of rabbits with the diplococcus pneumoniæ. These lesions are so general, even in those cases in which the organisms do not invade the blood, that it is pertinent to inquire what it is that causes the alterations in the tissues. This question has a most important bearing not only on the experimental disease, but even more on the natural disease, for in man it is only exceptionally that the organisms invade the blood, and yet, as we shall see, distant organs are affected. A particular case given by Professor Welch will be described as bearing on this point.

A rabbit was inoculated subcutaneously with the blood of another rabbit dead of the septicemic form of the disease, the blood having been demonstrated to contain numerous diplococci. A local reaction only ensued, and this of slight amount. The animal apparently recovered; but sixteen days after the inoculation it unexpectedly died. At the autopsy it was found that the local wound had quite healed; there was a mere point containing inspissated pus to indicate the seat of inoculation. No diplococci were present either in the seat of inoculation or in the blood

and organs, and yet the most extensive lesions were present in the liver, heart muscle, lymph glands, and elsewhere. The necrotic foci described above were most marked in the liver in this case, and the heart showed, besides the lesions found in other cases, an actual necrosis of considerable extent of the muscle fibers. This is an undoubted instance of death, not from the presence of the organisms, but from intoxication with the poisonous principle secreted by the diplococcus pneumoniæ.

This poisonous principle can be separated in an impure state, it is true; but still, in an active state, from the blood and organs of animals dead of the diplococcus infection, and from the culture fluids in which the organisms have grown, and upon introduction into rabbits, it is capable of killing them by intoxication. Hence we have no hesitation in ascribing the above case to a death from intoxication, and not from infection; and the lesions obtained in it are of the utmost importance.

When we compare the lesions of the tissues in human beings dead of croupous pneumonia with the changes in the bodies of animals dead of the experimental disease, we find not only that the complications, such as pleuritis, peritonitis, pericarditis, endocarditis, and meningitis occur, but degenerations in the muscle of the heart, degenerations and necrosis in the liver, in the spleen swelling, congestion, hyperplasia of lymphatic tissue, and necrosis of cells as well. And in the kidneys the degenerations in the epithelium are present, as in the kidneys of rabbits, and in addition the hyaline thrombi in the glomerular capillaries have been found.

Now that we are aware of the fact that the presence of the peculiar organisms is not essential to the production of the tissue changes in the experimental form of the disease, we are prepared to explain the lesions in other organs of

human beings in croupous pneumonia where the bacteria are limited to the affected lung. We know now that the development of croupous pneumonia is associated with the entrance and multiplication of the diplococcus pneumoniæ in the lungs; and the absorption of the poisonous products of these organisms by the circulating blood is believed to be the cause of the changes in distant organs. If we were to inquire now what it is that is most to be feared in combating this disease, the mechanical impediment opposed to the heart, or the withdrawal of a certain lung territory from the performance of its physiological functions, the answer must be that neither of these factors is in itself, nor are both combined, sufficient to account for the gravity that so often is a prominent feature of the disease. Rather, we must consider the effect which the study of the pathological histology of this affection has shown us is due directly to the poisonous influence of the pneumotoxin on the parenchymatous structures of the body. And if one more fact stands out with remarkable clearness in the interpretation of the work which has been done on this disease, it is that the local inflammatory process in the lungs is conservative and benignant, not to be combated, but rather to be encouraged; for it is to be borne in mind that it is the local process which prevents the invasion of the blood by this destructive organism, and when the invasion occurs we meet with those helpless cases in human beings, the asthenic types of the disease, and the rapidly fatal septicemia in the experimental form of the disease.

There is another aspect of this subject which, while it possesses the greatest interest, and is probably the most significant fact that has come out of the modern study of this disease, can only be alluded to in this paper. This concerns the conferring of immunity and the healing of the disease.

We have seen that rabbits are very susceptible to infection with the diplococcus pneumoniæ. Yet if they be inoculated with minute quantities of virulent cultures, or larger quantities of weaker cultures, or with large quantities of filtered bouillon cultures, or, finally, by the injection of the glycerine extract of the cultures, and they withstand the inoculation, they will be found to have acquired such a degree of immunity that they may be inoculated with the most virulent cultures without effect. This immunity is not pronounced, and it rarely lasts longer than six months; yet during this period it is transmitted to the offspring. Of transcending interest are the experiments on the cure of the experimental disease. It was found (Klemperer Brothers) that the serum and fluids of the body of an animal which had been rendered immune had the property not only of producing immunity when introduced into the circulation of another susceptible animal, but actually of curing the disease after the infection had been in progress some time. They believe that the pneumococcus produces a poisonous albumen (pneumotoxin), which when introduced into the circulation of an animal causes elevation of temperature, and the subsequent production in the body of a substance (anti-pneumotoxin) which possesses the power of neutralizing the poisonous albumen which is formed by the bacteria. In man they hold that during the pneumonic process there is a constant absorption into the circulation of this poisonous albumen produced by the bacteria in the lungs. This continues until eventually the same antidotal substance is produced in the circulation that has been seen to occur experimentally. It is then that the crisis occurs. The bacteria are neither destroyed, nor is their power to produce poisonous albumen lessened; but the third factor, the antitoxic element, now exists and neutralizes the toxic substances as they are produced. They demonstrated that

the serum of the blood of patients after the crisis of pneumonia contained the antitoxic substance, and was capable, in a fair number of cases, of curing the disease when injected into infected animals. They have made preliminary observation upon patients with a view of inducing the crisis by the injection of the blood serum of persons convalescent from pneumonia, and which consequently contains the antitoxic body. In six pneumonic patients the results were promising. In all there was a decided fall of temperature in from six to twelve hours after subcutaneous injection of from four to six cubic centimeters of the serum. The pulse and respirations were also diminished in frequency. In two cases the temperature fell to 37° C. Twice it fell and remained at normal. In only two cases it fell only temporarily. In ten typhoid cases the injections were negative. The serum has no effect when injected into healthy individuals.

ON ANESTHESIA FROM ETHER.

By James W. Guest, M. D.
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The first few successful cases of etherization are apt to produce a feeling of safety for succeeding ones, but the more one is engaged in the daily administration of ether the more cautious and painstaking he will of necessity become.

There are very few cases exactly alike. The marked differences and peculiarities become a frequent lesson to a careful and observant administrator.

The differences are best observed in the following conditions of life: (1) age, (2) sex, (3) size, (4) temperament or education, (5) health, (6) disease.

1. *Age.* The older the subjects, save in infancy and early childhood, the harder it is for them to take and bear ether well, as a rule. They have lost the vigor of early life, consequently have a diminished respiratory resistance, which is the essential point in a good and safe etherization.

The older the person the more pronounced the tendency to bronchitis, asthma, cardiac or renal lesions, every one of which adds to early and serious complications.

The explanation, probably, that old people bear an anesthetic better than the middle aged is, that the proportion given is far less, and it is given with more care and precaution because they *are* old. With the above facts it would make statistics appear better.

2. *Sex.* There is no question but that women take and bear ether better than men, and that a less quantity will produce the same degree of anesthesia. This is explained by their being less full-blooded and less fleshy about the neck as a rule, and, most important, less given to alcoholism. Alcoholics are "bug bears" to anesthetists, and never have a typical anesthesia. The difficulty with which they are anesthetized is in a direct proportion to the amount of whisky they have imbibed, and the length of time spent in imbibing it. The older the alcoholic the longer and the more ether required to etherize him.

3. *Size.* Fat and short-necked people are good examples of the differences in taking ether. They are harder to anesthetize and to hold for any length of time under the influence of ether, both of which circumstances increase the danger. This is no doubt due to the different degrees of swelling of the tongue and the mucous membrane of the epiglottis and larynx, which occurs in cases not well taken. Some writers claim in subjects of obesity the mucous membrane is more prone to the action of irritants than in sparely-built people.

This would appear, then, the reason why fat and short-necked people do not take or bear ether as well as the sparely-built, because the mucous membrane secretes more actively, and with the swelling of the adjacent parts of the throat acts as a mechanical obstruction to the free entrance and exit of air.

4. *Temperament or Education.* Temperament is an important factor in the giving of ether. Even-tempered people, who are no doubt the bravest people, take it better than irritable ones. They are in better condition, on account of their self-possession and composure, to reason with, and to carry the reasoning into execution.

Women are more even-tempered under surgical procedures than men, and will not resist the inevitable. Very seldom have I found it necessity with women to ask assistance in giving them ether. In most instances requesting them not to make resistance was sufficient. Encourgement to take it well is more effective usually than all else, for they all want to take it better than any one else ever did, and how easy to make them believe they are doing it.

Talking, laughing, or crying are favorable in inducing etherization, for the patient freely expires, which is involuntarily followed by a deep inspiration, and the desired effect is soon obtained. The taking of food before operations is most deceptive, and the digestion of it will differ according to the temperament of the patient. Some will eat a fairly good meal from four to six hours before an operation, and thoroughly digest it. The more nervous and irritable will eat sparingly of a supper the night previous, but will only partially digest it, and will throw up undigested matter the next day following the operation.

I have often seen coffee or tea given four or five hours before an operation, yet be ejected from the stomach while the patient is coming out from the effects of the ether. A difference of importance in taking ether is marked in the sensitiveness of the fauces, as there is a difference among patients in this respect. It is best to inquire before giving it if they have sensitive throats, for this is often a guide to giving it.

The suffocation usually produced is more marked in hyper-sensitive throats than in those less sensitive. In the majority of cases, however, the pharynx is very sensitive to the fumes of ether, and the quicker you destroy that extreme sensitiveness, by pushing ether from the beginning, the better and safer will it be taken. By abol-

ishing this sensitiveness as rapidly as possible, it prevents to a great extent the swelling of the mucous membrane, the coughing and vomiting, which are almost sure to follow from a slow and irritating administration. For this reason, if for no other, should near relatives be excluded from the room, for their presence and anxiety will involuntarily cause a slower administration from an innate desire to appear more humane. And, too, it increases the danger by allowing the long-continued irritating effect of the ether to more thoroughly arouse the activity of the salivary glands, and stimulates also deglutition, coughing, nausea, and vomiting.

By an effort of the will anesthesia can be either delayed or advanced, so it is of the greatest importance to first gain the confidence of your patient, and thus you can accomplish more.

I have noticed the sense of suffocation lessened very much at times by explaining to the patient to expect it, but to remember that it is only a feeling with no harmful effect. It is wonderful how far this remembrance will sometimes be carried by patients; often until they are in a good condition to fall an easy victim to an increased amount rapidly given.

Education and refinement are positive aids to a good and quick anesthesia. The contrast in hospital and private practice is well marked. In private practice, among the educated and refined, you gain the confidence and co-operation of the patient. In hospital practice among the laboring classes, where the word experiment is never fully lost sight of, you seldom gain the full confidence of the patient, and less often his co-operation.

In reference to the special senses, I have noticed the sense of hearing to be the last to succumb to ether.

Patients will oftentimes tell afterward of some word

spoken after a supposed loss of consciousness. In one instance a young man, while under ether, and while the operation was in progress, heard me tell the operator his pulse was 110. There could be no mistake about this, as it was the only time the pulse-rate was asked or given during the entire operation. Insensibility to the part was lost, yet his hearing and memory were not affected.

The question of stimulation before an operation is an important one. As generally recognized, stimulant doses of whisky or brandy are most essential before giving chloroform. It being a heart depressor, even from the beginning, we can readily see the advantage in giving a stimulant before. But with ether I believe stimulants are contra-indicated, because we are adding rapid heart stimulants to a greater one, ether — thereby overstimulating and taxing the heart in the beginning, when it is not indicated or necessary. Overstimulation of the heart from any cause has long been recognized as an injury, which can but weaken its action after a time.

5. *Health.* When the heart and respiration are good, especially the respiration, there is no danger in pushing the ether rapidly for a brief period while going under it; though when fully under its influence this method, if continued, would become a serious danger. The danger is mostly in the discrimination to accurately judge when the patient is fully under it. One of the greatest aims of an anesthetist is to prevent secretion and accumulation of the mucus in the patient's throat, and the more rapidly ether is given the less mucus there will be. After a slow etherization, with great secretion and accumulation of mucus in the throat, and stertorous breathing to follow, it becomes necessary to keep the inferior maxilla forcibly pushed forward throughout the operation, much to the discomfiture of the operator and administrator. To tor-

ture a patient for twenty or thirty minutes trying to give ether slowly and safely (?) and painlessly (?) is a sad sight, and not unlike the Frenchman's method of cutting his dog's ears off, namely, "little by little, so as not to hurt much." Reflex swallowing, coughing, and vomiting are sure signs of incomplete anesthesia, and, unless accompanied by cyanosis and difficult breathing, show that the ether should be pushed.

When once under its influence just enough should be given to keep the reflexes in abeyance. This requires but little. If the reflexes are allowed to return, the inconvenience of coughing and vomiting are not only most annoying to the operator, causing delay and disarrangement in his work, but increase the danger to life. Not a few cases of death are due to inhaling suddenly the vomited matter. The reflexes should be anticipated and prevented by a deeper narcosis. I do not believe patients are ordinarily benefited by allowing them to "come out for a minute" during an operation, as advocated by many, because the increased quanity of ether given necessary to again put them under it is more harmful than a mild continuance of it throughout the operation.

In regard to position, patients take an anesthetic better when the head is lower than the body. This position predisposes to a cerebral hyperemia, which is more favorable than a cerebral anemia, and, too, the trachea is freer from obstruction.

Nelaton, Sims, and others believe chloroform poisoning is principally due to cerebral anemia. This must be true also of ether. Never is a patient's condition alarming with flushed cheeks and pink ears, therefore it is best and safest to predispose to a cerebral hyperemia. The breathing is better and the aeration of blood more complete, as shown by the color of the face.

Anesthetics should never be continued on a pillow, yet it is best often to commence them on one; for all people intuitively believe they can breathe better with the head elevated. How easy after they are unconscious to slide the pillow out and arrange any little detail.

6. *Disease.* The fear of valvular or functional troubles of the heart is very often overrated. I have never seen a valvular diseased heart seriously affected by a proper administration of ether, and believe the increased action is compensated by the additional strength given to it by the ether. I would hesitate more in giving ether in a diseased lung or kidney than in a diseased heart.

In bronchitis an excessive secretion of mucus is already established, and needs but little ether to augment the flow and early complicate the condition. In asthma it is not well taken, because there is always a co-existence of bronchitis. It relieves the muscular spasm of the bronchioles, but it increases the secretion of mucus. This mucus is especially dense, and contains the Curshman spirals or molds of the bronchioles.

In kidney lesions ether undoubtedly adds a low grade of inflammation, which is noticed in the increased amount of albumen following etherization.

To a functional heart trouble it is an absolute aid in reducing the heart's action to a mechanical regularity The most apparent good results are those from a functional irregularity, when the pulse becomes full and regular after a few minutes under ether.

General Remarks. The after-effects from ether are largely dependent upon the manner in which it was taken.

If taken rapidly, without complications arising, it is thrown off rapidly with usually no nausea or vomiting.

If taken slowly, with a struggle, great secretion of mucus in the throat and stertorous breathing, it is thrown

off slowly, with nausea and vomiting almost sure to follow. Therefore the period of recovery is in proportion to the manner and time of the etherization. There is less shock after a quick etherization, because the patient takes less and is not exhausted from muscular efforts of a long resistance.

There are two kinds of breathing that should never be confounded, namely, palatine and laryngeal.

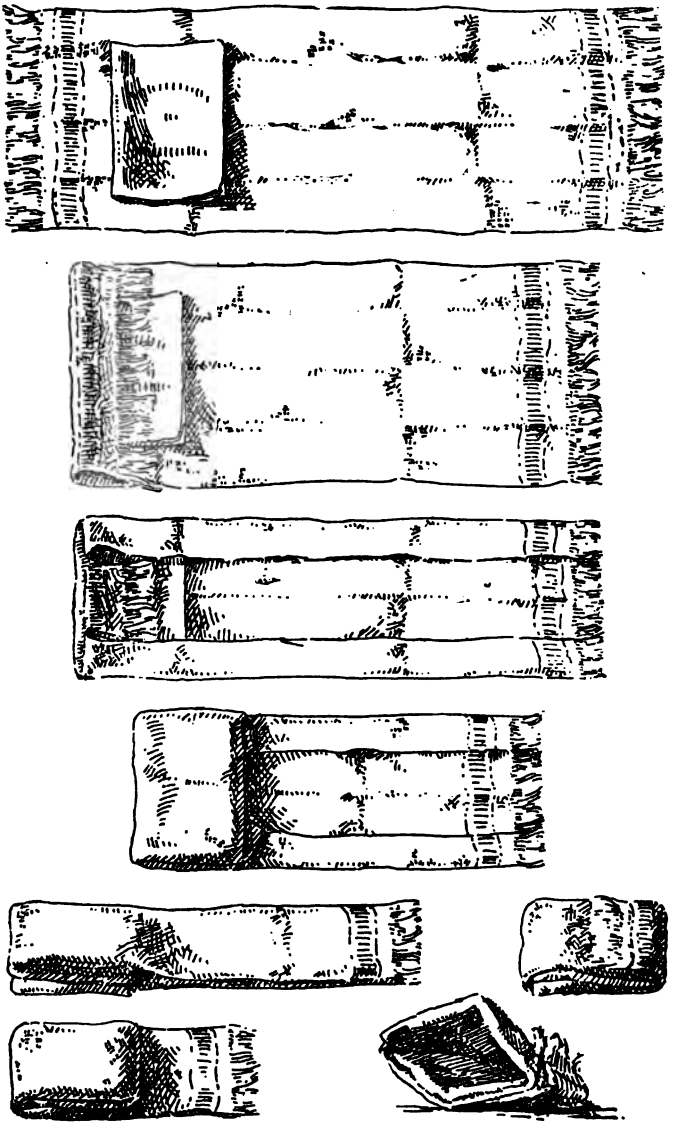
The palatine is produced by vibrations of the soft palate, when the mouth is open, and is indicative of a safe anesthesia approaching a natural sleep.

The laryngeal is always a danger signal, and caused by the swelling of the mucous membrane of the pharynx and larnyx, and in sound approaching a crowing character as in croup, and indicating mechanical obstruction.

This is perhaps the only time when it is absolutely necessary to withdraw the ether and let the patient come out for a while until the swelling subsides. It is more important to watch the respiration than the pulse, for if the respiration is good the pulse will never fail first. Therefore it is more important to employ artificial respiration first of all in accidents, and to rely chiefly upon it. Injections of respiratory stimulants are as essential as the cardiac, and of these strychnine and nitro-glycerine are the best.

In large accumulations of mucus in the throat I have found that by turning the patient's head to one side as far as practicable and compressing the *alæ nasi* at each expiration and relaxing at each inspiration, a sufficient amount of mucus will be expelled from the mouth to allow a good respiration. In comparison to the time of administration of the two anesthetics, chloroform and ether, there is very little difference.

To give chloroform with safety requires as much time,



Process of folding the towel and pamphlet to form the cone.

ordinarily, as in giving ether. Of course, if it is pushed it is quicker in its action, but the danger is greatly increased.

I believe statistics will show most of the deaths from chloroform occurred in the early stages, showing it can never be pushed in safety as can ether. With the exception of children, it is seldom chloroform is given to the surgical degree and borne well under five minutes, and more often longer. In the last one hundred cases of ether, given in private practice, I have averaged eight minutes per case. The slowest was sixteen, and the quickest three minutes. In regard to the various methods of giving ether, it makes but little difference so you have the essential features of confining it. The carefulness and experience of the administrator being the real safety, I use a very simple cone which I devised after experimenting with many kinds. It is a pamphlet, a towel, and two pins. It has to recommend it the following:

1. Perfect cleanliness, a new cone for each anesthesia.
2. Quickly made and always at hand.
3. Most inexpensive.
4. All the essential points for a good and safe anesthesia.

It is made by spreading the towel out and placing the pamphlet at one end with a two-inch margin left for a grip over it. Grip each side by now folding the long edges of the towel *in* over the pamphlet. Turn the pamphlet over once, and you have lined the cone. Now fold the pamphlet sideways to the long axis of the towel and you have the cone complete, except the two ends not closed. Bring the long strip of the towel left over the sides of the cone for one revolution, and pin when you reach the end of the towel.

CLINICAL OBSERVATIONS ON EPIDEMIC INFLUENZA.

By John A. Ouchterlony, A. M., M. D., LL. D.
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Epidemics of influenza have occurred from time to time before that which has so extensively prevailed all over our continent during the last two years. The literature to which they have given birth appears quite meager in comparison with that following upon this the most recent invasion of the epidemic.

The journals have teemed with articles on specific influenza, and articles still continue to appear embodying the observations and views of physicians in different parts of the country. Yet there seems to be much to learn concerning this disease, which can be accomplished only by the recording of individual experience.

Actuated by this conviction, I venture to present to this Society the results of my own labors in the study and treatment of epidemic influenza.

Cases were first observed here early in the year 1890, and continued to appear until the end of winter, when the disease gradually disappeared. With the advent of cold weather in the autumn it returned, and the winter of 1891 witnessed a repetition of the experiences of the year before. On the close of winter the cases of influenza again began to abate as before, but the advent of the present year brought in its train the unwelcome guest which had visited us the two preceding winters.

In point of severity and prevalence the winter just past stands first, the winter of 1890 next, and the winter of 1891 last. It is the epidemic of these three winters that constitutes the material upon which my paper is based.

The disease, though protean in its manifestations in different individuals, was nevertheless characterized by a clinical history and grouping of symptoms strongly suggestive of etiological identity.

Period of Incubation. As in other infectious diseases, there was doubtless a period of incubation, but owing to the general susceptibility and prevalence it was almost impossible to determine precisely when infection took place, and also the duration of the period of incubation. My impression is, however, that it was in many instances extremely brief. At times the disease appeared almost immediately after exposure, leaving no time for an incubation process.

Varieties. The classification of epidemic influenza into a catarrhal gastric and nervous form of the disease, according to the prominence of symptoms referable to the respiratory, digestive, or nervous systems, was not generally practicable.

The symptoms were frequently irregularly grouped. In a large number of cases intense muscular pain throughout the whole body was a predominant feature, and I am inclined to think this would justify the addition of another variety that might be designated as the *muscular form of influenza.*

Catarrhal symptoms were far less common and much less marked than the name of the disease seems to indicate. In many cases they were entirely absent.

Digestive disturbances of some kind were certainly always present, but rarely in such a degree as to justify a distinct grouping on their account. Severe stomatitis,

intense gastric irritability, profuse diarrhea, sanguineous intestinal discharges were in no instance observed by me in this epidemic.

Some observers have described what they called "Influenza Fulminans." If the term be intended to designate merely a great suddenness of onset, then certainly this variety has been met with here; but if it is meant to convey by this name a form of influenza which by its malignancy overwhelms the organism and causes it speedily to succumb, as in typhus fulminans, I was fortunate enough never to have encountered it.

Symptoms. Great differences between individual cases were observed in this respect, both as to the presence of individual symptoms and as to their grouping.

In a considerable proportion of cases there were prodromata, lasting from one to several days, and consisting mainly in languor and lassitude, a sense of general *malaise*, with more or less marked impairment of appetite. Now and then a feeling of great fatigue was complained of, for which there was no apparent cause. Flashes of heat alternating with chilliness, and even slight and transient rigor, also occurred at times at this stage. Headache and wandering pains in different parts of the body were not seldom present.

A well-defined chill of greater or less violence, accompanied by rise in temperature and strongly suggestive of a malarial paroxysm, ushered in the disease in some instances.

In others a sudden feeling of illness without any premonition would take possession of the patient, and with this came often a conviction or apprehension of impending danger for which the character of the symptoms did not account. The chill was sometimes repeated more than once in the same attack.

Coryza was only rarely observed in my cases, but catarrhal pharyngitis and more or less extensive bronchial catarrh were among the most commonly noted of the early symptoms.

In point of frequency the bronchial catarrh was second only to the migratory muscular pains, which figured very conspicuously in the cases observed by me.

Whatever the mode of access, whether sudden or gradual, whatever organs bore the brunt of the attack at the start, there was always fever. The suddenness and extent of the temperature excursion was almost always in proportion to the severity of the attack. The type of febrile disturbance was, as a rule, remittent, with the exacerbation toward night. In most instances the fastigium was reached in from twenty-four to forty-eight hours. Its duration was determined by the intensity of the infection and by the presence and nature of complications. Defervescence rarely took place by crisis, although at times I have seen a sudden fall in temperature accompanied by more or less profuse sweating. Often enough a tendency to sweating was well marked throughout, and had not the effect of lowering the temperature. It seemed rather to be an evidence of general relaxation.

In general the fever terminated by lysis, and in severe attacks the return to normal temperature was a slow process that required several days for its completion.

In mild cases the temperature reached only 101° or 102°, while in severe attacks it rose to 104° or even 105°.

It was not uncommon to find that patients whose hands felt rather cool, and in whom but little fever was anticipated for this reason, would, when tested thermometrically, give a temperature of 104° and over.

When in the course of the disease a complication arose, this would generally be indicated by a commensurate rise

in temperature, but it also happened at times that even after the temperature had begun to fall there would be repeated exacerbations without any complication to account for it. Such occasional relighting of the fever also occurred after the norm had been reached.

In some cases the fever continued for several weeks, this persistence being explained only by the persistence of the toxemia.

The muscular pains to which reference has already been made were always present, at least I can not recall a single case treated by me in which this symptom did not form an integral part in the semeiological picture. It goes without saying that they varied greatly in severity and duration. In some they constituted one of the earliest symptoms, and abated with the progress of the disease either spontaneously or as a result of treatment; in others they continued throughout the whole course of the attack, and their cessation marked the advent of convalescence. In a third group these pains were not only the principal complaint, but entailed such intense suffering as to be absolutely unbearable.

They were usually migratory, shifting from place to place, now attacking one extremity, then another, or seizing upon one group of muscles after another in more or less rapid succession.

It was not uncommon to hear a patient complain of sore throat, when the most careful examination failed to reveal any local lesion whatever, the soreness, or, rather, pain, being entirely muscular. In the same way the ocular muscles, or the muscles of respiration, would in some cases be affected.

In exceptional cases, when these muscular pains were very severe and persistent, there would be but slight temperature disturbance.

In this connection it may not be out of place to mention the occasional occurrence of oppression or distress referred to the chest, even when neither pulmonary nor enteric complications were present. It was probably either of purely nervous origin or due to implication of the thoracic muscles.

The most striking symptom, besides fever and muscular pains, was undoubtedly the sense of weakness and exhaustion which was present in every well-developed case of influenza. It declared itself early, increased with the progress of the attack, was generally out of all proportion to the fever and other symptoms, and often remained long after all other manifestations of the disease had completely disappeared.

This general debility was in individual instances associated with complaints of more marked weakness in the upper extremities, so that the patient felt as if he could hardly lift his hands, or a sense of weight in the lower extremities, with difficulty in raising the feet from the ground, or, again, he felt almost "too weak to breathe."

In severe cases the organs of circulation underwent profound modifications, and even when the morbid process was of less intensity there would always be a certain degree of circulatory disturbance.

The pulse was always more or less accelerated, a certain correspondence between it and the degree of fever being observed. It was often small, weak, and compressible, even at an early stage. The first sound of the heart soon became short, like the second, and purely valvular.

With the progress of the disease, even when uncomplicated, and especially when complications arose, the frequency of the pulse increased, so that a rate of 120 per minute was common. It did not, as a rule, fall *pari passu* with the temperature as defervescence occurred, but

remained abnormally weak and rapid for a protracted and indefinite period.

Among the disturbances of the nervous system incidental to epidemic influenza cephalalgia has already been mentioned. It was sometimes persistent, while it ordinarily was limited to the initial stage.

Delirium was rare, especially in uncomplicated cases, somnolency equally so; insomnia was more frequently observed. Excessive and quite troublesome restlessness was an occasional symptom, and really distressing.

The Digestive Organs, though necessarily involved in this morbid process which invaded all other parts of the economy, appeared to be implicated in a comparatively mild degree. Anorexia, a coated tongue, occasionally nausea, moderate constipation or relaxation of the bowels, sometimes cramps, were the only symptoms that attracted my attention. Sore throat and even painful deglutition, though sometimes complained of, were generally dependent upon either a catarrhal pharyngitis, or still more frequently it was simply a painful condition of the muscular structure of the parts involved, like that of the muscles elsewhere.

The urine was scanty and high colored, but, save in cases of complicating nephritis, presented no evidence of renal disturbance.

Duration. The duration of the disease was extremely variable, and it has been very difficult, if not impossible, to form a correct estimate on this point. The reasons were manifold. Many patients did not summon a physician until after they had been ill for some time, and it was no uncommon thing to find that they were unable to designate the initial day of their illness.

The absence of any striking symptom ushering in or marking the arrest of the malady was often the principal

obstacle. It must also be borne in mind that severe complications not seldom protracted the case far beyond the duration of the primary disease without any line of demarkation between it and the secondary lesion.

Instances where the disease seemed to be abortive were not wanting. Sometimes it was very mild, so that in the course of a few days the patient was sufficiently restored to return to his ordinary avocations.

The interval between accession of fever and defervescence with marked subsidence of leading symptoms has seemed to me to constitute the actual duration of the disease, even though somewhat lasting debility or other abnormal conditions extended the period of convalescence sometimes even indefinitely.

Guided by this rule, the average duration of my uncomplicated cases was from seven to ten days. The course of the disease was generally more brief in children, and in persons past middle age it was usually more prolonged, besides being more subject to complications in the latter class.

Convalescence. In a certain number this was soon established and was complete, but in a large proportion it was tardy, and the patient continued for weeks, even for months, in a state of weakness and exhaustion altogether out of proportion to the severity of the attack. This profound and protracted devitalization of the whole organism I found to be one of the most characteristic features of the disease.

After a comparatively short and not remarkably severe attack the patient would be found, perhaps three or four months later, complaining of decided diminution of strength, of a feeling of great fatigue after even slight exertion, indisposition to either bodily or mental exercise, backache, headache, soreness, and even pain in the mus-

cles, the pulse more or less rapid but accelerated by even slight emotion or exertion, weak, compressible—the first sound of the heart short and valvular, temper irritable, sleep insufficient and disturbed, sometimes depression of spirits, even melancholia, in persons naturally of cheerful disposition; and yet the appetite often enough remained good, digestion and assimilation unimpaired, and without any indication of anemia.

Careful investigation establishing entire absence of any local disease, the only conclusion that could be drawn was that the preceding infectious disease by its subtle action had produced a profound and persistent depression of the nerve centers.

Immunity. Unlike other infectious diseases, one attack of epidemic influenza does not confer immunity against subsequent attacks. A recurrence of the disease in the same individual was witnessed by me in a considerable number of instances, not only in successive years, but even after an interval of but a few weeks. It must, however, be admitted that in these cases the first attack had invariably been mild and uncomplicated, and the convalescence speedy and complete.

Relapses, by which one must understand a return of the original disease before or immediately after it had entirely run its course, never occurred. When such an event was said to have occurred it invariably happened that some complication or sequel had developed.

Complications. The tendency of epidemic influenza to localize upon the respiratory mucous membrane is so constant and strong that bronchitis must be regarded as rather a symptom than a complication, and one looks for it as a part of the morbid process just as one looks for the bronchial catarrh in measles or the intestinal lesion in typhoid fever.

It is also interesting to note in this connection that it was in the characteristic purulent exudate upon the bronchial mucous membrane that Dr. Pfeiffer found the bacillus which is generally considered as the morbific agent of the disease.

When the bronchial catarrh becomes very extensive, and especially when it invades the capillary tubes, it becomes a complication of considerable importance. Extensive bronchitis occurred frequently, in my cases the capillary variety only twice.

The border line between this affection and catarrhal pneumonia is a very narrow one and is readily passed. The latter was of rather frequent occurrence in the attacks of more severe type. In my own experience the most dangerous complication was croupous pneumonia. It was present in all the cases which terminated fatally. Out of nine cases four died—two of the fatal cases were males and two females; two had double pneumonia; all four were over fifty years of age, the oldest was over seventy. In the majority of the patients with pneumonia, the latter commenced as an ordinary bronchitis, the croupous exudation coming on later. In one case symptoms of acute pleurisy followed upon a well-marked coryza, and consolidation supervened last of all. The other complications were as follows: Delirium, 2; pleurisy, 4; pseudo-membranous tracheitis, 1; endocarditis, 2; pericarditis, 1; thrombosis, 1; nephritis, 2; parenchymatous tonsillitis, 2.

Very numerous sequelæ have been mentioned by other observers, but so far comparatively few have come under my notice. The first and most important of these has been cardaic asthenia, characterized by a feeble and short systole, increased frequency, and irregularity of the heart's action, palpitation induced by even moderate exertion and sometimes edema of the feet. In these cases there was

no valvular lesion, but in some the organ was enlarged. Well-marked mitral insufficiency developed in two cases. Chronic nephritis was observed in two cases. Persistent rheumatoid articular affections were noted in several instances. In some cases menstruation, previously normal, became more prolonged and profuse. Insomnia and marked depression of spirits followed in a few cases, and neuralgia of various nerve trunks occasionally ensued.

Effect upon Other Diseases. In some persons an attack of influenza seemed to engender a strong receptivity or susceptibility to tuberculosis, and where this disease preexisted its course was unfavorably influenced by the epidemic infection. Emphysema and Bright's disease were also aggravated by influenza, and syphilis was found to be a soil in which the influenza bacillus flourished, but the patient did the reverse.

Prognosis. Where no organic disease is already present and no grave complication sets in during the course of the influenza, the prognosis is, as a rule, favorable. I lost patients only when pneumonia set in, but even then not always, for some of the most severe cases of pneumonia supervening upon influenza in old patients got well.

Treatment. It must be borne in mind, in the first place, that epidemic influenza is an acute infectious disease; and, in the second place, that like others of this class it runs a self-limited course. In the third place, that, as no specific against it has yet been discovered, the duty of the physician with regard to it is analogous to that of the pilot he can not quell the storm, but by the exercise of knowledge and skill he may guide his vessel safely through it.

I found it often of advantage to begin treatment with a mild purgative, calomel or sprudel salts being those usually employed. When the muscular pains were extremely severe, hypodermic injections of morphine were

administered. Ordinarily phenacetin proved efficacious in controlling this symptom. Salol was the agent relied on with a view to moderating the fever, but as it also appeared to favorably influence the pains, it was prescribed in the majority of cases throughout the whole attack, the usual dose being from five to ten grains every two or three hours. The combination of salol and phenacetin in equal parts often proved especially beneficial. Quinine was generally given when the febrile movement assumed an intermittent type and simulated more or less closely a malarial affection. Alcohol was found of signal benefit, and its regular and continued administration was a leading feature of the treatment.

When cough was particularly distressing, inhalations by means of the croup kettle or steam atomizer gave relief, and the addition of com. tr. benzoin to the water rendered the steam more efficacious. Rest in bed throughout the whole course of the disease I regard as an important part of the treatment. In severe cases it is unnecessary to insist on this point, but when the attack was but moderately severe or mild, the patient was often tempted to leave the bed and sick-chamber too early. The best rule in the management of epidemic influenza is to "make haste slowly."

I am sure that by observance of this simple precaution complications may be warded off and convalescence hastened, while much evil has resulted from neglect of it. Maintaining a uniformly warm temperature of the sick-room is another simple rule, the importance of which I have often had reason to appreciate. In a disease exhibiting so strongly as this a tendency to exhaustion, the necessity of keeping up the patient's strength by concentrated and easily digested and assimilable food can not be overrated. During convalescence quinine was found far more

efficacious as a tonic than it was as an antipyretic during the attack. To combat the atony of the whole muscular system, even that of the heart, I know of nothing equal to strychnia in full doses and persisted in for a considerable time.

In conclusion, I must point out that influenza seems to expend its virulence more upon the nervous system than upon the blood. Hence it is that in those suffering severely from exhaustion and other sequelæ of this disease, the blood seems to have deteriorated but little. For this reason we ought to address our efforts to tone up the nervous system rather than administering hematics. And better results were obtained from the use of strychnia, arsenic, and phosphorus than from iron. The use of the latter no doubt has its legitimate place, but is not always needed, nor is it alone sufficient to repair the ravages of this disease. In the extreme cardaic asthenia that was sometimes observed, I have had good results from strophantine, and the best results when it and strychnia were given together.

DISCUSSION.

DR. T. B. GREENLEY: What we call *la grippe* or influenza has more characteristics than the symptoms of any disease you can imagine. I have had some experience in treating the disease, and I have seen nearly all the symptoms which we have an account of in various cases developed, but I have never seen all the symptoms in one case at the same time. I think if all the symptoms attacked a patient at the same time he would hardly recover.

As to the cause of it, I think it is very doubtful. We see it on the Continent spreading rapidly north and south. It has no respect for cold or hot weather. A week or ten days hence we hear of its prevalence in Boston, then at Chicago, rapidly spreading all over this country. If a microbe can travel that rapidly he is the most rapid traveling plant that I have heard

of. Then, again, the disease traverses the sea. A short time ago it was not long in coming from Russia over here. It is astonishing how rapidly the disease travels, or rather the germ, considering the adverse winds it had to contend with.

I hardly think that one microbe produces the symptoms the disease manifests on several occasions. There must be several microbes. We hardly see all the symptoms develop in one case. In some cases I have seen intense neuralgia. The patient would cry out with frontal neuralgia and intercostal neuralgia, so that I was compelled in some way to alleviate the terrible suffering and render the patient moderately comfortable. I have seen one case die with it. We have some sequelæ, as the essayist says, and in old people it has a general debilitating effect on the nervous system. There is a probability of heart-failure in old people. I have ventured but slightly on the antipyretics and analgesics for fear I might do some injury when the nervous system was depressed by the character of the dose. I advise quinine in tonic doses, and, when I give that or some other supporter, fortunately I have had no mortality in treating the disease.

DR. EWING MARSHALL, of Louisville: I would like to ask Dr. Ouchterlony whether the patient kept up the treatment for a long time after the attack began, and if it made the attack worse in any respect?

DR. OUCHTERLONY: In reply to Dr. Marshall, I will say that not only myself, but a number of foreign observers, have noted that those patients that went to bed early at the very onset of the disease, or those whose occupations necessitated them to be indoors, not only got along much better, but did not have the disease so frequently as those who spent their time in outdoor occupation. The sooner the patient gave up to the disease the more rapidly convalescence set in, and the less likely was he to suffer severely and to be the subject of complications.

A member: I would like to ask whether any of the gentlemen have noticed a reduction in the temperature below normal.

DR. J. W. IRWIN, of Louisville: I hardly know what I can say in addition to what my friend, Dr. Ouchterlony, has said

in his elaborate paper. He has covered the ground so thoroughly that he has left very little to be said. His remarks on the history, diagnosis, prognosis, symptomatology, and treatment correspond to what I have observed myself. I do not agree with him in the administration of synthetical drugs for the relief of pain. This is a disease that attacks the nerve centers primarily, and in attacking these centers it begins to depress the vital powers, and why should we help it along by the administration of drugs that tend to increase this trouble?

It is a well-known fact that when the disease runs a rapid course, having a high temperature, reaction often follows, and may supervene much more rapidly than in those lingering, depressed cases where the nerve centers are much involved; hence I say the use of synthetical drugs, as antipyrin, phenacetin, and so on, have not entered into the treatment of the disease by me. Sometimes morphine and sometimes atropia I have given. I have given these drugs under the conditions he has mentioned with beneficial effects. Regarding the reduction of temperature, I have known it fall to 95° F., and remain there for about three or four days. I find, as the doctor has said, that the systematic use of stimulants, such as strychnine, did more toward restoring the patient to a normal condition than any thing else under the circumstances.

SOME SEQUELÆ OF INFLUENZA.

By J. W. Irwin, M. D.
Louisville, Ky.

The visitations of influenza which occurred in our city in the winters of 1889, 1890, and 1891 have induced me to report somewhat in detail some of the sequelæ of this disease which have come to my notice.

Case 1. Male, sixty-five years of age, has had two attacks of influenza; the first in 1890, and the second in 1891. The first attack was very severe, lasting nearly three months, during which time his mind was much disturbed by hallucinations and fears that he was in a strange city and could not get to his home and friends. This attack gradually passed off, and the mind became for the most part clear, leaving the patient with some dull pain in the occipital region. He also complained of weakness, and at times felt very despondent. His vision was much impaired; one pupil was dilated, the other contracted. Both pupils contracted to light.

Fearing that some spinal disorder might be present, evidences of disease in this direction were sought for. The patient could walk with his eyes closed as well as with them open, and there was no loss of the patella-tendon reflex.

The second attack of influenza occurred in December, 1891, and was not very severe. The acute symptoms lasted a few days only, but much feebleness and depression

remained. Six weeks from the date of attack marked evidence of spinal disorder became apparent. There was almost complete loss of power in both legs, and the sphincters of the bladder and bowels had become enfeebled. Patella-tendon reflex is not yet absent, but very much lessened. The patient can not walk with his eyes closed; he suffers from local spots of hyperesthesia and anesthesia, and has a feeling of constriction around the abdomen. He has pains in the thighs and legs, occurring in paroxysms, which at times are very severe. The Argyle-Robinson pupil is not yet present, but other evidences of posterior spinal sclerosis are becoming much more manifest.

The history of this patient reveals nothing to point to any other exciting cause of his malady than the two attacks of influenza. His ancestors were all healthy people, and lived to old age.

CASE 2. Mr. W. B., thirty-eight years of age. The patient had an attack of influenza, which occurred in November, 1891. In all his life before this time he had not been sufficiently ill to require the visit of any physician. When I saw him his temperature was high; he was delirious, restless, and talked incoherently. The acute symptoms lasted four or five days, and then subsided, the mind becoming perfectly clear. A troublesome and painful catarrhal affection in the frontal sinuses, nose, throat, and bronchial tubes supervened, which kept him confined to the house for five or six weeks, during which time he complained of much feebleness and became very despondent. As soon as he was able to travel I advised a change of climate for him. He remained away from home, in a healthful part of the country, three weeks, and on his return the catarrhal trouble had about ceased. He still complained of attacks of dull headache and vertigo. His vision had become greatly impaired. His pupils were dilated, but

responded to light. Patella-tendon reflex, on examination, was found to be greatly diminished, and he complained of lightning pains in the thighs and calves. He could not raise his feet from the ground, when his eyes were closed, without falling. He complained of spots of hyperesthesia on various parts of the body, but no anesthesia. The headache still continues, and all the evidences of locomotor ataxia have become apparent. Patient's history is good. He has not had syphilis, neither has he indulged in excesses of any kind.

CASE 3. Mrs. Z. T. came under my observation in March, 1890. She had had an attack of influenza during the winter of 1889, since which time she has not been well. Her history is as follows: Father, mother, two brothers, and a sister died of consumption. She has one sister living who is in good health at the age of thirty-four years. The patient, when taken with influenza, so far as she knew, was in perfect health. I found on examination that the apex of the left lung was consolidated. She had a dry, hacking cough, with very little expectoration, some hectic fever, and loss of strength. She was nervous and felt greatly depressed. Her troubles have increased steadily since I first saw her.

CASE 4. Miss Maggie N., aged seventeen. This patient I saw in the early part of December, 1891, at which time she was suffering from a severe attack of influenza. The attack lasted a few days only, leaving her very much weakened and depressed. Shortly afterward she came to my notice again, complaining of a dry, hacking cough, loss of appetite, night fevers, followed by perspiration.

The family history showed that an aunt on the maternal side died of consumption. She has two brothers and three sisters living and in good health. The cough has grown steadily worse, and expectoration has become much more

abundant; two or three slight pulmonary hemorrhages have occurred. She is afflicted with night-sweats, and has become much emaciated. All the evidences of advanced phthisis are now present.

Four more cases of consumption have come under my care, the exciting causes of which can be attributed to influenza only.

A noteworthy fact in all these cases of consumption is that in every instance an hereditary tendency to the disease has been apparent.

A bright, red-colored skin eruption, which was followed by desquamation, was observed in one eighth of all the cases which came to my notice.

A case of hypertrophy of the liver and one of the spleen following influenza have also been observed by me.

Two cases of melancholia due to influenza, which do not show much signs of improvement, are still under treatment. Kidney involvement, showing albumen, hyaline casts, and blood in the urine, with suppression, has occurred in five instances. This complication made its appearance in all cases before the end of the second week from the beginning of the attack of influenza. These cases have all gotten well under such treatment as would be given in a similar condition of kidney involvement following scarlet fever. Two well-marked cases of hay-fever have followed influenza, and each of the patients has had two attacks, coming the latter part of August and lasting two and four weeks respectively.

One feature of the visitation of this disease in 1891 was much more marked than in the year 1889, which was nervous depression. In such cases I find the foregoing complications to have occurred most frequently.

The first appearance of influenza in 1889 was attended by more pain, fever, and delirium; the disease usually ran

a rapid course, and recoveries were more complete than from attacks occurring during 1891. In the latter period the disease was much less painful, but the nervous system was more involved, and recoveries much more protracted.

The cause of this treacherous malady is now regarded by mycologists as bacteria, and the finding of the germ has proven the correctness of this statement.

In viewing the disease clinically some curious facts have presented themselves as to its behavior. Unlike most other infectious diseases, it has appeared in localities far remote from each other on the same date, which goes to show that its spread is not dependent upon one center of infection. For example, when the disease appeared in 1889, it was observed simultaneously in New York, Cincinnati, Louisville, and St. Louis. This would tend to prove that direct communication, either from person to person or through the medium of the atmosphere, is not an essential factor in spreading the disease. It is equally hard to explain the meteorological condition which favors its development and transmission. Regarding the higher atmosphere theory, Tyndall, in his work entitled "Floating Matter of the Air," found that the atmosphere on the tops of the highest mountains in Switzerland was entirely free from every kind of germ, yet when the germs are carried there from the lowlands they live and multiply. Again, the complexity of wind-currents—horizontal, oblique, and perpendicular—observed in the upper atmosphere by the celebrated English aeronaut, Mr. J. Glaisher, would render the explanation of the spreading of the germs of disease through this medium very unsatisfactory. What, then, causes the spreading of the disease?

Finally, the following conclusions, derived from observation, may be permitted:

1. The resemblance of influenza to nearly all other infectious diseases, in the rapid decline of the vital powers through its primary effect on the nervous centers.

2. Its close resemblance to scarlet fever in many instances, chiefly by the skin eruption, which is followed by desquamation and the acute kidney disorders.

3. The blood changes, which affect the nutrition of tissues and organs—in some instances leaving permanent injury in those previously healthy, and sometimes, in the weak and nervous, effecting such changes as result in restoration to health.

CARDIAC MECHANISM.

By Ewing Marshall, M. D.
Louisville, Ky.

It is my purpose, under the heading of Cardiac Mechanism, to discuss the following subjects:

The Causes of Circulation; A Complete Heart Action; Causes of Apex Beat; To Demonstrate the Relation between the Heart's Action and the Curves obtained by Endocardiac Pressure.

The causes of circulation laid down by physiologists generally are as follows:

Valves of the veins; action of the skeletal muscles; suction power exerted by the thorax when distended; ventricular systole.

By muscular contraction the blood is pressed out of them, and as their veins are supplied with valves it can not go toward the capillaries, and therefore moves onward toward the heart. The muscles actively and the valves passively assist in the circulation, but they can not assist in the movement of the venous blood through the veins unsupplied with either valves or skeletal muscles, and, again, the muscles can not assist when they are inactive, and yet circulation continues through that very tissue.

The suction power exerted by the distended thorax plays an important part, but I question about its being as important as commonly accredited, and my doubts are based on the following reasons:

1. The heart acts four times while the lungs are acting but once.

2. Circulation continues temporarily even when respiration has stopped.

3. When the thorax is opened for the purpose of examining the heart in a living, warm-blooded animal, if artificial respiration is kept up the heart will continue to act for some time, yet of course there is no suction power due to a distended thorax present at such a time.

The power exerted by the contracting ventricle, all are agreed, is the prime power, but I question the ability of the left ventricle to force the blood to the extremities through the capillaries back to the right auricle.

The general scheme used to demonstrate this is faulty in an important point. It is considered that all the tubing enters into the scheme after the force-pump has been acting for some time and become filled with fluid, so that as much fluid as enters at the proximal ends with each stroke of the piston is discharged at the distal end; but that will not hold good in the vascular system, for all the vessels are by no means filled at any one instant. All the blood in the body probably could be stored in the abdominal vessels and yet not distend them.

If the forces so far accounted for were the only ones, I believe the blood would sooner or later collect in the veins, but there is a force unnoticed by all the physiologists within reach, with the exception of Dr. Foster, and though he calls attention to it, yet he does not introduce it in his summary of the causes of circulation.

At the close of ventricular systole the muscle relaxes, and by its relaxing a negative pressure or so-called vacuum is produced, just as you see in a household syringe. When you compress the bulb you force the fluid out of it, and when you relieve it of the pressure it distends, and fresh

fluid is drawn into it; therefore I urge this suction power of the cardiac cavities as deserving of much more attention than it has received.

A complete heart action, or cycle, as it is commonly called, being a continuous one, we have to select some point to begin with, and by common consent the close of the ventricular systole is taken.

While the ventricle is contracting, the auricle has relaxed and the blood has been drawn into it, so that when the ventricular systole is over and its relaxation occurs, producing the vacuum in its cavity, the blood pours in from the auricle until the resistance exerted by the ventricular wall equals the force of the onward flow; then the auricle fills until the resistance of its walls equals the power of the onward flow. Now the blood is backed upon the great veins, and as their walls are weaker than either ventricle or auricle they are distended, and this distension is really the starting point of systole, for these vessels are supplied with muscular fibers similar to those found in the heart. Now they, being distended, act according to the function of muscular tissue, and by their contraction add the additional power necessary to distend the auricle, and it then responds to the irritation of distension and sends the necessary additional force to distend the ventricle, and it then contracts, the auriculo-ventricular orifices are closed, and the blood is forced into the great arteries.

The causes of the apex beat given by the different physiologists I have consulted are as follows:

Foster credits it chiefly to the sudden growing tense and hard of the ventricle during its systole.

Dalton, to the lateral swelling of the circular fibers protruding the apex.

Chapman: Sudden distension of vessels at the base; recoil of the ventricles as they discharge their contents, and the muscular fibers tilting up the apex.

Flint says the impulse is due to the locomotion of the ventricles, and in another paragraph says the locomotion is due to the sudden distension of the great vessels.

I do not feel that it would be wise to prolong this paper by discussing the effects of these different theories, so I will make haste and state how I think it is chiefly produced. Perhaps I may make myself better understood by recalling a little anatomy.

The wall of the right ventricle differs, as is known, from the wall of the left ventricle in three ways:

1. The left ventricular wall is about three times as thick as the right, and extends about one half inch below it.

2. The circular fibers appearing in such quantity in the wall of the left ventricle are almost absent from the right.

3. The left ventricular wall is thickest midway between auriculo-ventricular orifice and apex, and then shades off in thickness to the apex, which is only two thirds as thick as the central band-like condition, while the right ventricular wall is thickest close to the auriculo-ventricular orifice, and shades off slightly to the apex.

A theory of Dr. D. T. Smith's about the action of the uterus made me study the effect this massing of the fibers in a girdle, as it were, around the heart would have.

Now, the systole begins above and travels like a wave from the great veins to the apex; but, mark you, the apex is the last to act. When ventricular systole begins, the blood is forced toward the inactive apex, and this strong girdle of circular fibers in the left ventricle crowds down the volume of fluid and resists any distension at that point. For three reasons I believe a bulging occurs at this time due to this hydrostatic pressure:

1. Muscle active above and inactive below.

2. The strong center resists distension.

3. The weak, inactive apex protrudes before the pressure.

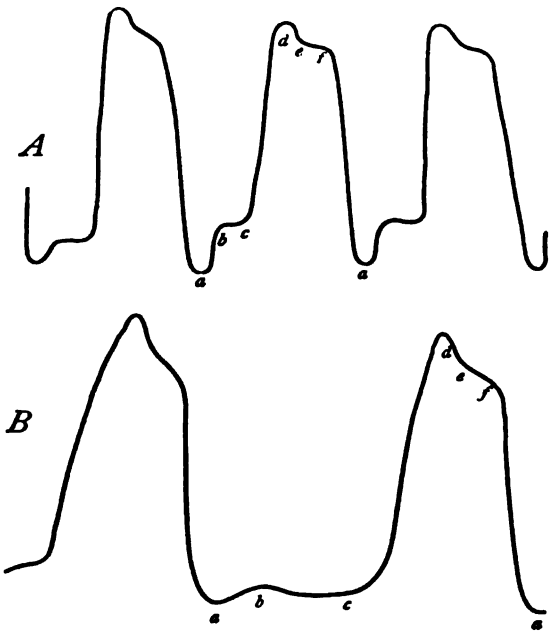
As soon as the power in the ventricle is sufficient to overcome the resistance in the great arteries the blood rushes out and the heart becomes shorter, due to the contraction of the longitudinal fibers.

All observers agree upon the appearance of a temporary protrusion of the apex of the heart when observed in the open thorax; but in the face of Erichsen's demonstration of laying an excised heart on the table and seeing it contract, they try to explain away what they call the apparent elongation, but I think they have overlooked the fact that the presence of fluid in the contracting heart would alter somewhat its real action.

Lastly, I wish to demonstrate, if I can, the relation between the parts of a heart rhythm and curves obtained by endocardaic pressure. If you will observe the diagram (copied from a plate in Foster's great work), I will attempt to make my ideas manifest.

It is scarcely necessary to mention that the commonly accepted idea of a heart cycle is systole, or action followed by diastole or rest, while I wish to show that it consists of three parts, systole, diastole, and rest. At the point *a* in our drawing we find the negative pressure or vacuum in the ventricles, and the blood is drawn in from the auricles, and the force of the incoming blood raises the pressure to *b;* there it continues until auricular systole occurs, marked in the figure by *c*. Auricular systole causes an increase in the ventricular pressure, evidenced by the upward stroke beginning at *c*. This increase in pressure is continued upward by the ventricular systole, which follows immediately upon the auricular systole with no appreciable interval between the close of the one and the beginning of the other. The pressure in the ventricle steadily increases until it is great enough to overcome the resistance in the great arteries.

As soon as that is reached, represented by *d* in the drawing, the blood rushes out of the ventricle and there is a slight fall in pressure; but the ventricle quickly catches its lost grip and maintains the pressure (represented by letter *e*) until all the blood is expelled from its cavity, when it relaxes and its walls fall apart, assisted by the backward rotation of the heart and the distension of the coronary arteries, and then a new cycle begins.



CURVES OF ENDOCARDIAC PRESSURE FROM LEFT VENTRICLE OF DOG.

A a quickly beating heart, *B* a more slowly beating heart.

If you will compare the two curves you will see how this explanation is borne out by them. If the heart is beating rapidly, rest is short, demonstrated by the upper curve *a*. If the heart is beating slowly, the rest is prolonged. Now the curve, which I venture to call the dias-

tolic curve, is the one which Dr. Foster says he is unable to explain. He says others have tried to explain it on the theory that it was due to the auricular systole, but that in the slow-acting heart it is too far from the ventricular systole.

It appears to me perfectly satisfactory when we explain it as due to the pressure exerted by the blood drawn in by the ventricular relaxation, which thus exerts an active force in the circulation and accounts for that part of the cardiographic curve that has hitherto been unexplained.

DISCUSSION.

DR. D. T. SMITH, of Louisville: The paper read by Dr. Marshall is a very interesting one, and one to which I desire to address a few remarks. It is one of those subjects involving difficult questions in physics which requires close study to be understood, and after having given the subject, as Dr. Marshall gives me credit for, years of study, I think the application of the principle involved, as it pertains to the heart, can be sustained on physical principles and also developmental principles; that is, the existence and perfectness of the circular muscular fibers and the arrangement of the right ventricle without these circular fibers show almost teleological construction for the purpose of increasing the condition of endurance; that is to say, the right heart is so constructed that the lungs are protected from overpressure. If the right ventricle was constructed as the left ventricle is, congestion of the lungs would be common. The arrangement, as shown by Dr. Marshall, allows a relaxation which provides for lighter pressure upon the lungs, while that of the left ventricle is constructed in a way that the greatest amount of power can be used with the greatest economy.

I think Dr. Marshall has given us an excellent contribution to our physical knowledge.

CLINICAL BACTERIOLOGY.

By Louis Frank, M. D.
Louisville, Ky.

The study of bacteriology has aroused interest in layman as well as doctor since Koch's discovery of the tubercle bacillus in 1882. No study has made such rapid strides, cleared up so many points, or given cause for so much thought as this most scientific branch of medicine.

The advances made by the surgeon, the great principles of antisepsis and asepsis, depend upon bacteriological research. It is not only to the surgeon that this work has been beneficial, but also to the clinician, to whom the subject is an especially important one, assisting materially in his diagnosis, being sometimes the only absolute means, as well as in his treatment and in his prognosis.

To understand clinical bacteriology does not necessitate that one be a thoroughly versed bacteriologist, no more than it is necessary that he should be a pathologist to make microscopic urinalysis. It is necessary, though, that he be versed in technique and know how to handle the microscope.

This is a day of microbes, and I hope the time will soon come, for come it must, when by our knowledge of microorganisms we will be able to combat disease, and when that time does come we will have the day of preventive medicine. Even now we have text-books of bacteriological diagnosis, which shows the rapidly growing importance of

the subject. It is necessary in this progressive age that one must know clinical bacteriology to be abreast the times, to practice intelligently, giving the patient the benefit by making early and correct diagnosis, and meeting the real therapeutic indications. We are not working on theories, but dealing with absolute facts.

Take, for instance, that dread disease, tuberculosis, the scourge of every nation, and the cause of one seventh of all deaths. The relation of the bacillus to the disease as a causative factor is now established, and is a point requiring no argument or discussion. Even the very few who doubt it would be unwilling to allow themselves to be inoculated with a culture of the bacillus.

What can be more gratifying than to make an early diagnosis in this disease? How much we may gain by so doing, and not waiting until destruction is beginning and consumption written on every line of the face! At this late stage nothing can be done, whereas by early diagnosis we are able to hold out some promise and can improve our patients by surrounding them by the proper atmospheric conditions, giving them proper diet, etc.

You all know how difficult it is to diagnose thus early by the physical signs, for there are many things to be differentiated. In fact it is a bronchitis that we met with in the earliest stage of the disease. Can we positively say this is a tubercular bronchitis? Yes; but only by examination of the sputum. The microscope is the judge, and if the evidence shows the presence of the tubercle bacillus, there is no appealing the case.

Even cavities are not such easy things to diagnose physically, for we might have the same physical signs from bronchiectasis with peri-bronchitis. It is an absolute impossibility to diagnose some of these cases by our usual means. The bacteriologist will tell you, though, that he can in a

few minutes say whether the patient positively has tuberculosis. The examination requires but a short time, is simple, the method can be practiced without any great outlay for apparatus, and can be learned by any one in a few hours. The methods for staining the organisms are various, but I prefer the method given by Gunther, as experience has taught me it is the best and most rapid, the staining process being completed in less than five minutes.

Malaria, that common every-day malaria which we all know, occasionally causes us trouble, and in these we have another example of the practical importance of our bacteriology. Can you in the beginning always diagnose typhoid fever? In most of the cases we can only do so by the therapeutic test, it being always a question between typhoid and malaria. There is another way, though, and by its application we are sure of our diagnosis at once. This latter symptom, a pathognomonic one, is the recurrence of the specific parasite in the blood.

Lavaran, in 1882, described peculiar structures occurring in the blood of those sick of malaria, which were later studied most accurately by Marchiafora and Celli, who found them constantly in the blood of the malarial person, and always absent in those not having the disease. Marchiafora and Celli gave the name of plasmodium malariæ.

Dock, then of Galveston, examined the blood of seventy-six patients, and found in forty-one cases the bodies above spoken of. In thirty-five cases, including dysentery, influenza, etc., also in four cases of enteric fever, two of which had been diagnosed malaria (one of the latter dying), he was able by the examination of the blood to exclude malaria, the subsequent cause of the cases confirming his exclusion. He further says, "A number of cases were encountered which the blood examination showed to be

malaria, but in which the diagnosis would not have been made without it or the verdict of time and the therapeutic test." (Medical News, 30 [v], 91.)

Lavaran, Celli, Crookshank, and Heuppeau agree that these plasmodia are the cause of the disease. (Lancet, 15 [vii], 91.)

James found in 400 cases, as the constant type of protozoa, the specific one of malaria. (*Hygienische Rundschau*, 15 [viii], 91.)

Hertel and Van Noorden were able to make a negative diagnosis in a case beginning tuberculosis by the absence of the plasmodium malariæ, the further course of the disease proving that their diagnosis was correct. (*Berliner Klinische Wochenschrift*, vol. 12.)

Toulmin (Medical News, 19 [viii], 91) reports three cases in which he says it would have been impossible to make a differential diagnosis at the time between malaria and typhoid, except by the examination of the blood for the parasite or by the therapeutic test. In another case he says that for the diagnosis it would have required more time, apparatus, and trouble than required for the blood examination.

From a large number of cases he comes to the following conclusions, that

"There are cases in which from the history, symptoms, and signs we can not differentiate between malarial fever and certain other diseases.

"In examining the blood of these cases for the presence or absence of Lavaran's organism we have a means of diagnosis at once accurate, practical, and practicable.

"These cases are rare in which the organisms, though present, can not be found, and they do not exist at all if the examinations are careful and the examiner has had experience."

To this I would add that the examination of a patient with fever and no diagnosis, or an uncertain one as to its cause, is not complete unless an examination of the blood has been properly made.

If we are able to so easily diagnose the disease, why should we not employ this method and cease giving quinine in every case of fever when we are uncertain as to its cause? the latter manner of making a diagnosis being, to say the least, very unscientific.

As to the prognostic value of clinical bacteriology, I will mention a case:

In December last I delivered Mrs X., primipara, of a healthy child. Labor normal. Two days after delivery I was asked to look at the child's eyes. Finding a very bad case of ophthalmia, I called in Dr. Dabney, who ordered nitrate of silver locally. In speaking of the case several days later, the doctor expressed the opinion that this was a gonorrheal ophthalmia, and suggested that I make a bacteriological examination, which I did on the tenth day after the discharge began and after daily use of the silver. Still I was able at this late day to find, in specimens stained with eserine and methyl blue, the characteristic diplococci of Neisser. In this case the prognosis was made by me at most from the microscopic examination. The father of the child gave a history of gonorrhea previous to marriage, but said he had no discharge when married, nor has he had since. The mother gave no suspicious history, and I was not able to examine the vaginal secretions. I am watching though for the development probably of some tubal trouble, as an infection had undoubtedly taken place and still exists.

I have taken up in this short paper only those diseases where the examination can be easily made, and without the necessary apparatus for cultivation of organisms as

required for examinations in diphtheria and other diseases of microbic origin, but I sincerely hope the time will come when every doctor will make bacteriological examinations for their clinical value. I am also glad to see that the medical schools of Louisville are abreast the times and are teaching the doctors that are to be this most important subject.

DISCUSSION.

DR. J. O. JENKINS, of Newport: I am pleased with what the doctor has said regarding the microscope, especially in tuberculosis. I have been treating tuberculosis with tuberculin, and have treated a good many cases. In two cases where the physical signs were positive, as confirmed by other diagnosticians, there was no bacillus present. We could not explain it. The *post-mortem* signs were perfect, and yet no bacillus could be found. I just mention this to show that we sometimes expect a thing and do not get it.

DR. J. B. MARVIN, of Louisville: I congratulate my young friend, Dr. Frank, on his very excellent paper. There are several points it illustrates, and first, "that a little learning is a dangerous thing." It seems that a few men have picked up a little knowledge in regard to the germ theory, and have gone around blowing about it and scattered a good deal of error, and instead of advancing the progress of science they have retarded it. We hear people talking about germs just as though they were great big objects. Why, if you met them in a big room you would not know them.

Another point: Whether you believe in the germ theory or not, whether you believe that these germs are etiological factors, hardly anybody at the present day denies the great diagnostic value of some of them. Take the first aspect of the paper, tuberculosis, its diagnosis. It seems to me that the two good genii of the grounds of the ignorant doctor are malaria and hysteria. We see a case with a little intermittent or remittent fever, little or no cough; we say it is malaria, and, flattering to our soul, we fan that patient with hope until the golden opportunity has slipped by. It is not an easy matter

to make a physical diagnosis in these cases. There may be consolidation so slight or scattered about that you overlook it. An examination of the sputum will clinch the diagnosis when you are in doubt. The most expert may be in doubt as to whether it is some benign or fatal trouble.

Take the other division of the paper, malaria. Who among us, in our climate especially and all through the Southwest, does not feel trouble and doubt in mind about typhoid fever?

He will not make a diagnosis before two or three weeks have elapsed, when there is diarrhea, rose-colored spots, nose bleeding, etc. We would make the diagnosis before that, if it is possible, by an examination of a mere drop of blood from the end of the finger, to say absolutely and positively that this is not typhoid, but some other form of fever—malarial fever. If we could do this it would be a great boon. I am in hopes that the whole history of the malarial fevers of our country will be rewritten in the next decade. I confess the examinations I have made have not given me as much assistance as I have been led to believe from the authors quoted. As the bacillus mentioned by the essayist has not been cultivated, it may be a question whether it is the cause of malarial fever or not. Certainly, it can not be disputed that every authority claims that it is constantly present in malarial fevers, and not present in other troubles which simulate it.

The last point mentioned in the paper was with reference to the gonococcus. Fortunately, I think, we see comparatively little of the specific ophthalmia which destroys the eye where cleanliness is generally practiced; but it is a capital means of diagnosis. I think the ordinary doctor, if not on his guard, will be more liable to err and confound an ordinary harmless micrococcus with the specific gonococcus from an examination of the discharge than he would the tubercle bacillus or the germ of malaria.

I desire to say that Dr. Frank was once my pupil, and as he alludes to the diagnosis of typhoid fever by elimination, he has reference to some of the lectures I had the honor of delivering to him some three or four years ago on the subject of elimination of typhoid fever diagnosis in our part of the country by the administration of quinine. It is a pretty good illustration

of how we are moving in medicine. It was quoted in English works also, that is, the differentiation by quinine as to whether we are treating typhoid fever or not. It is an impossibility in the Southwest to diagnose typhoid fever as has been done in the New England States in the first two or three days visiting the patient. I think Dr. Frank's paper is one of the most scientific contributions to which we have listened. He is mapping out ground for us in advance. I thoroughly believe in the microscope, and think every practitioner should use it, for we have gone too far to retrace our steps in this direction. The revelations of the micro-organic world are real. We are following laggardly in this particular. Great advances have been made in this line, and the time will come when it will be our practice to diagnose cases by the aid of the microscope.

DR. LOUIS FRANK: One of the gentlemen (Dr. Jenkins) said that in the autopsies he had made tuberculosis was demonstrated, yet in the sputum no tubercle bacillus could be found. I would like to ask him how many slides he examined to know. It is necessary to examine sixty or seventy slides before we can make a positive diagnosis.

The point I wish to make as to malaria and the gonococcus of Neisser is, that the bacillus of malaria has not fulfilled all the requirements that an organism should of the conditions that are necessary to prove that it is a pathogenic organism. We have found organisms in the body of those suffering from the disease, and we have been able to inoculate others in which previously the plasmodium did not exist, and found after inoculation they were present.

Baum has made pure inoculations of the gonococcus and has inoculated the urethra of man, producing specific urethritis, from which he obtained pure cultures of the germ. This has fulfilled all the conditions necessary to produce an organism that is pathogenic. It must be present in all cases of the disease.

DIABETES MELLITUS.

By J. O. Jenkins, M. D.
Newport, Ky.

Diabetes mellitus or glycosuria is a more or less chronic disease, characterized by a marked increase in the daily amount of urine passed, and which contains a variable percentage of sugar and an increased specific gravity. Many causes appear to have an influence in its production, but the most constant are those morbid states influencing the liver and pancreas. Puncturing the floor of the fourth ventricle midway between the origins of the auditory nerve and parvagum, abscess or injuries near this point in the brain, disease of the spinal cord or medulla, partial or complete excision of certain organs, spleen, etc., will produce the disease; and it may appear temporarily in acute febrile processes as rheumatism, pneumonia, and other diseases, or after the use of certain drugs, as chloroform, turpentine, etc. The close relationship between the sympathetic nervous system and the fourth ventricle, and the fact that the sympathetic system is a controller of glandular nutrition, would indicate that stimulation of this system results in an alteration of the character or quantity of secretion or excretion of the cells of certain glands, and that the center for stimulating the glycogenic cells is at some point on the floor of the fourth ventricle. Heredity is also a predisposing cause of its developing. Pavy has shown that defibrinated arterial blood injected into the

portal vein produced, within forty five minutes, from ten to fifteen grains of sugar to the ounce of urine. Defibrinated venous blood would not give a like result, and concludes "that oxygenated blood in some manner influences the liver so as to lead to the production of glycosuria by a paralysis of the vaso-motor dilators (constrictors) of the liver, creating a hyperemia of the organ and a consequent inability of the cells to oxidize the glycogen perfectly."

The excess of oxygen in the blood injected in his experiments favored such excessive accumulation of glucose that the tissues were unable to draw rapidly enough upon the supply, and all above normal demands were carried through the blood and excreted as glucose by the kidneys. A special ferment contained in the pancreatic juice is responsible for the breaking up of the sugar or starch contained in food and its conversion into glucose in the intestine. From the intestine the glucose is absorbed and carried by the circulation through the portal vein to the liver, there to meet the special glycogenic ferment, and is converted into glycogen, and later into glucose, which in certain pathological conditions is eliminated as such by the kidneys. If the pancreas be extirpated a true diabetes mellitus follows in the majority of instances, and on the *post-mortem* table nearly all diabetics have a diseased pancreas. The inference is, therefore, that either disease or absence of the gland is a cause of diabetes, in that the glycolitic ferment is not present to split up the sugar resulting from digestion into glucose, that it may enter the circulation as a properly elaborated food.

As is well known, there are often coincident gastro-intestinal disorders in an attack of diabetes. These troubles generally partake of a diarrheal type and are difficult to manage. The discharges in two cases coming under notice were very frequent, unattended with pain, pale in

color, and contained undigested food. In one case the diarrhea had continued unchecked for a period of fourteen months, in the other only about two months. In these cases there seemed to be a lack of digestive ferments, and though there was no jaundice at any time there was a peculiar anemic pallor about the face.

The disease is very insidious in its onset, and is seldom recognized early; in fact, accident is most likely to direct attention to an examination of the urine, and the discovery of sugar clears up the diagnosis at once. Perhaps attention may be called to the frequency of micturition, increased flow and high specific gravity, or to the abnormal appetite, or to a troublesome skin disease, boils, pruritus of the vulva or glans penis, to a falling off in flesh, great thirst, ocular disorder, or paralysis. A few minutes' use of the test-tube and urinometer opens the way for a rational treatment of a disease which had previously not been suspected.

To detect the presence of sugar, Fehling's or any of the various modifications of the same are most convenient and trustworthy; nevertheless, reliance should not be implicitly placed upon a single test or method; it is better to confirm the first by several. Fermentation of the suspected urine with yeast offers an excellent method of determining both the presence of sugar and the amount, as, with the possible exception of inosite, nothing in the urine will cause the growth of the yeast plant. Albuminous urine should be boiled and filtered before applying any of the sugar tests, or the test-tube will be filled with a ropy or flocculent precipitate. The quantitative copper solution mentioned on page 475 of Dacosta's Medical Diagnosis will give good results, and can be depended upon to keep all its good qualities for a long time, and will react to one half grain of sugar per ounce of urine, giving a greenish-

yellow color to the fluid on boiling. There are several misleading reactions, however, with either the copper or bismuth tests, which are of practical importance. The presence of an excess of uric acid or urates will give a discoloration in the copper test very similar to that of sugar in small quantities. This can be readily proven by using urine from a case of acute articular rheumatism before it has become alkalinized. Adding the copper solution and heating brings out a more or less intense yellow color in the fluid, of about the same intensity in color as would be given were there one half grain of sugar. This discoloration is also present if the patient has been taking salicylic acid or any of its combinations. Boetger's or the bismuth test will be also affected if albumen or mucus is present, the bismuth being darkened by the sulphur in the albumen. In an experimental solution of honey in normal urine, at 1020 specific gravity, acid to litmus, the copper test gave increasing shades through green-yellow, yellow-green, yellow-red, and finely powdered red, the latter being visible when two and a half grains of honey had been added. The bismuth was perceptibly darkened, however, by one half grain, and increased in color until it became quite dark at two grains.

If Robert's suggestion of heating the Fehling's solution and adding the urine to the hot solution is adopted, there will be less likelihood of error. If sugar is present to the extent of two and a half grains or more, fermentation with yeast is sure to give absolutely correct results. The difference in the specific gravity before and after fermentation must be noted, and for every degree's difference one grain of sugar must be estimated, and the total amount daily excreted calculated. The liquor of fermentation should be also tested, that it may show whether the sugar has been entirely converted or not.

Diabetes is subject to exacerbations from various causes. Mental worry, next to the intemperate indulgence at table, is one of the most prolific sources of disappointment when treating a diabetic. A celebrated divine, editor of a flourishing religious paper in a neighboring city, always noticed an increase in unfavorable symptoms and more sugar in the urine when the cares of the paper pressed upon him too severely, or when some difficulty presented itself to him in the proper discharge of his duties. He was finally unable to continue the responsibilities of editorship. Diet has much to do with the disease; a total exclusion of farinaceous foods, sugar, or any thing containing either is imperative for the good of the patient. Nutritious nitrogenous articles of diet must be advised, and the bill of fare so arranged daily as to avoid repugnance to the articles provided.

As to bread preparations, there are a number of diabetic flours and flour foods on the market, but they all contain a greater or less per cent of starch. To roughly determine their value, four samples from different manufacturers and one sample of best roller process family flour were taken and tested with iodine for starch. All samples, both raw and cooked, gave more or less marked blue, No. 5 least so; Nos. 1, 2, and 4 gave a slight sugar reaction, with Fehling's test before cooking. After cooking five minutes, all gave a sugar reaction, Nos. 1 and 5 being most marked. Nos. 2 and 3 changed to a lemon color when tested, the others red. Twenty grains from each sample were taken and carefully cooked in a flask on a water bath, and to each were added two drams of saliva, and subjected to a temperature of 70° F. for twenty-four hours. They then presented the following results: No. 1 was the only sample showing traces of undigested starch, and this but faintly. Testing for sugar, a marked reaction took place in No. 1 only, the others pre-

senting a more or less intense light yellow or fawn color with Fehling's test, and a slight reaction with Boetger's. To further prove the presence of sugar, forty grains of fresh yeast were added to each of the foregoing solutions, and fermentation allowed to proceed twenty-four hours, with the following result: The specific gravity remained unchanged in all except common flour, which indicated between two and three grains of sugar per ounce. On testing the liquor of fermentation with the copper solution, the same light yellow or fawn color was observable as was noticed previous to fermentation, and was probably due to amylose or dextrin. Long-boiled mucilage of Iceland moss and also of sunflower seed, when treated with Fehling's solution, gave the same variety of color as the food preparations. From the slight reactions in all these foods No. 5 appears to be the best, while Nos. 4, 2, and 3 rank next in value. These foods are very digestible and nourish the body well, and, aside from the dark bread they make and its inclination to "fall" in baking, the patients appear to like them quite well.

As to the peptonic theory of diabetes or peptonuria, a carefully selected diet can certainly benefit the patient, and the indiscriminate eating of carbo-hydrates, as is advised by some practitioners, surely adds to the load already laid upon the stomach and digestive functions, and is productive of a more rapid advance of the disease. Of three cases now under treatment, two presented nerve disturbances, which suggested an analysis of the urine. Briefly stated, they are as follows:

1. Mrs. S., aged twenty-eight, has aborted five times from natural causes at periods ranging from two to six months. Placenta usually fatty. Last abortion August 29, 1891. Shortly after resuming her household duties, symptoms of locomotor ataxia, consisting of tinglings in

the fingers and toes and formication, inability to balance herself with the eyes closed, or to step over the carpet sill, go up a step without using both hands and feet, tripping over slight obstructions, dropping articles from her hands, and a total abolishment of the tendon reflexes made their appearance. From four to six quarts of urine passed daily; thirst; increased appetite; diarrhea; loss of weight; sleeplessness. Urine 1030 to 1036 specific gravity, and responded to Fehling's and Boetger's tests; fermentation gave ten grains of sugar to the ounce of urine. At present all these symptoms have disappeared, except that there is as yet no knee-jerk.

2. Mrs. N., aged sixty-five, subject to ocular trouble for more than a year, and has been under treatment by a specialist for cataract. Seen on March 19, 1892. She had retired on the night of the 18th feeling in her usual health, which had not been good for the past year or two, and awakened in the morning to find her speech impeded. Examination showed her to have right glosso-labio-laryngeal paralysis. Inquiry developed the fact that she passed from six to eight quarts of urine daily, and could not sleep well on account of micturition. There had been diarrhea for more than a year past. Thirst and an increased appetite and a general wasting of the body had been noticeable. A sample of her urine gave an estimate of thirty grains of sugar to the ounce, specific gravity 1036. Under treatment the urine dropped to five quarts daily of 1028 specific gravity and twenty grains of sugar per ounce. The paralysis also improved.

In the treatment of these cases a strict diet was maintained, and hygienic regulations and moderate outdoor exercise advised. Arsenic in the form of the solution of the bromide or Fowler's solution, in doses of from three to five drops after meals, has been employed. The drug has had

a remarkably beneficial effect in all the cases, the quantity of both urine and sugar diminishing, the diarrhea abating, and the gastric symptoms disappearing. Though other remedies, such as codeia, salicylate of soda, syr. lactophosphate of lime, etc., made with glycerine instead of sugar syrup, had at first been tried, none of them could be compared with arsenic for promptness of action and restoration of function.

The results of examinations of the urine in case No. 2 are annexed.

DATE.	Specific Gravity.	Daily Amount of Urine, quarts.	Reaction.	Fehling's test for Sugar.	Specific Gravity after fermentation.	Sugar per ounce of Urine, grains.
March 20, ...	1036	. . .	acid	+	1006	30
March 28, ...	1034	8	acid	+	1010	24
April 4, ...	1033	6	acid	+	1012	20
April 11, ...	1035	5½	acid	+	1006	29
April 17, ...	1034	5½	acid	+	1007	27
April 24, ...	1030	5½	acid	+	1008	22
May 1, ...	1028	5½	acid	+	1006	22
May 8, ...	1032	5½	acid	+	1008	24
May 15, ...	1032	5½	acid	+	1006	26

A remedy lately become prominent is jambul, and it might be worthy of a trial, as continental writers report cures from its use. According to the most careful observations its action is "in preventing to a marked degree the conversion of starch into sugar in the alimentary canal and of glycogen into sugar in the tissues." Desiring to test the efficacy of the drug, five minims of the fluid extract were given three times daily to the cases referred to above. The treatment began May 10th, and a comparison made on May 16th, the patients being restricted as to diet; on May 10th the urine in case No. 1 showed a trace of sugar; on May 16th there were about two grains of sugar per ounce of urine. Case No. 2 on May 10th: Urine contained twenty-four

grains of sugar per ounce; and on May 16th there were twenty-six grains to the ounce. The quantity of urine in case No. 1 was slightly increased, while it remained the same in case No. 2, viz., 5½ quarts in twenty-four hours. One case of transient glycosuria with pruritus vulvæ was much improved, the sugar entirely disappearing from the urine and the pruritus improving under the jambul. It is of course too early yet to say what the remedy will do in these cases, but from this limited trial it does not seem to be as yet a specific, or that it is best to allow a patient a sugar-forming diet.

DISCUSSION.

DR. JOHN A. LARRABEE: The points made by the essayist are very prominently brought out. The fact of the effect of pancreatic secretions in the intestine producing this change in the sugar product or starches is one that has not been sufficiently insisted upon. The experiment well known to us all of the injection of sugar into the veins not directly producing glycosuria, but the fact of the ingestion of starchy products in the intestines doing it, bears out the idea of the essayist.

Another point: The doctor did not insist sufficiently upon the etiology of the disease bearing upon hereditary nervous predisposition. I believe it is a fact, borne out by statistics, that diabetics are the descendants of diabetics to a great extent. Whether or not their ancestry show it by heredity, there is almost always a condition of nervous transmissibility in parents. This point I have been struck with, especially in getting the history of cases of diabetes, and it would seem that with this condition there was organic disease demonstrable in the brain sufficient to produce it. The essayist alludes to it under the head of mental strain, mental worry. That of itself does not produce it unless there is a diathesis.

I wish to add one word with reference to jambul. I have used it and think it is a most admirable remedy, one which is worthy of the confidence of the medical profession. I have used it in three cases of very pronounced, long-continued

glycosuria or diabetes with astonishing results. The fact that we do not have to change the diet with it is a strong point. With the use of jambul you can allow the patient to eat any thing he wants.

DR. J. O. JENKINS: I acknowledge the pertinency of Dr. Larrabee's remarks. They are to the point. Heredity plays a prominent part in the development of the disease, and patients of the neurotic type are more liable to it than others. I did not wish to burden my paper with a recital of cases. I know of three brothers, one of them a medical student, who, being in ill health, had an examination of his urine made, and sugar in quite a large amount was found. The physician suggested bringing a sample of urine from his brothers also, and he found that the two brothers were affected in the same way. Diabetics in that family could be traced back to two generations.

EXCISION OF THE BREAST FOR MALIGNANT DISEASE.

By H. Horace Grant, M. D.
Louisville, Ky.

The progressive surgeon of the present era, with the welfare of his patient as the objective point of his efforts, and his confidence in the security of the armor which new and progressive experimental science has provided against infection, no longer consults statistics and literature before he begins his operation, but, perfecting by accurate methods his diagnosis, and assuring himself of the constitutional resistance of his patient, surrounds the operating-table with conditions necessary for success, and takes up his knife to cure.

In "A Plea for Progressive Surgery," a late ex-president of this Society has shown in a recent address that true conservative surgery is radical even to heroism, yet preservative to the confines of safety.

Justifiable surgery is one thing and successful surgery is another. And, without going to any mention of what constitutes either, it is easy to see that one may do justifiable surgery which is not successful, and successful surgery which is not justifiable.

Among the great number of men who will or must do surgery there are a few leaders—leaders from ability, from force of circumstance, from position, from accessibility; these are the teachers of the rest; upon them in large measure rests the burden of surgical advance.

If, from conceit of their ability or from the nature of surroundings, they essay operations whose mortality largely outweighs in worth their good, even in the ablest hands, and without due consideration precipitate crude surgical opinions upon an unprepared class of followers, the tears of many thousands, needlessly bereaved, are at their hands. The day may be early coming when there will be no opprobrium in surgery save ignorance of the proper methods and incompetency in execution. Though this day has not arrived, yet it is true there should be no compromise in completeness short of the limits of safety.

The subject of this paper is one on which there has been wide difference of opinion. Though the very large majority of surgeons are on the side of radical operation, some of the very ablest believe in only the palliative steps and partial removal.

In discussion of this most important operation, important because of its ever-recurring need and the vital necessity of its proper execution, statistics are of little value. True though it is figures will not lie, yet, through the incompletness of reports and the carelessness and inaccuracy of compilers, statistics may be made to support or to destroy nearly any theory.

It is the intention to present in this paper only the logical side of the question; certain facts, however, are well established.

The average duration of life in carcinoma is less than three years from the time of discovery of the tumor, and ten per cent of all deaths from carcinoma are breast cases alone. The affection is invariably fatal after a most painful and loathsome course, and occasions the most melancholy mental distress.

The percentage of recurrences after the old operation, usually incomplete, is seventy five per cent.

In sarcoma the progress is more rapid, and the diagnosis in the early stages difficult. It occurs more frequently early in life, and if hesitation permits its continued growth it soon becomes inoperable. When attacked early its removal is simple compared with the radical operation for carcinoma, and the prognosis probably more favorable. Repeated operations are to be undertaken without hesitation whenever the sarcomatous evidences reappear; the comparative inseverity of the operation makes it doubly appropriate. If unarrested, sarcoma is early fatal. That both carcinoma and sarcoma develop as local affections is an undisputed question; how far predisposition or inheritance may contribute to development is not determinable. Were it certain, however, that such influences were constant and effective, the propriety of the removal of any attempt at location as early and as thoroughly as possible would still be an imperative duty.

The influence of hereditation is perhaps wholly in the limits of tendency or predisposition, and is more positively shown in many malformations and incompletions of devel opment than in any direct constitutional manifestions, save perhaps syphilis alone.

Surely no surgeon would hesitate to operate on a hare-lip, or a club-foot, or a cross-eye, because it was a family characteristic, as it is so very commonly the case; fully as practical, it seems, would be an objection to remove the local determination of carcinomatous predisposition when accessible and eligible.

Granting every claim made by those who favor incomplete operations, or who absolutely decline to operate, there are but three objections to the demand for fullest relief, that is the uncertainty of diagnosis, the increased mortality when the axilla is invaded, and the probability of early recurrence.

With respect to the first objection, it is but fair to say that hesitation is to be observed in the young when the functional activity of the mammary gland is a matter of great importance and when the probabilities of carcinoma are few, where chronic inflammations and abscesses, adenoma, and various benign cystomas are the rule.

While carcinoma can usually be excluded under these conditions, sarcoma is often simulated. At the very worst, an exploratory incision can add nothing to the gravity of the non-malignant condition, but will readily establish a diagnosis while there is yet full time for help.

After the fortieth year all removable tumors of the breast should be excised, the earlier the better, without regard to diagnosis.

The overwhelming balance for good in such a plan leaves the few removals of benign tumors out of deserving thought.

While this article was in progress I removed the right breast of a woman, fifty-seven years of age, for what had been diagnosticated chronic abscess, but which proved a rapidly growing scirrhus. The woman reports that in 1842, about her sixteenth year, the elder Gross excised the left ramus and angle of the inferior maxilla for "a bleeding cancer": perhaps a malignant epulis. There is no reproduction of the jaw, but no farther sign of cancer from them until now.

With respect to the second objection, it may be said that there is no argument against interference so strong as incomplete work. Better do nothing than half do the operation. Even after the most radical steps the mortality must always be trifling in competent hands. Under the present system of surgery there is but one danger of the older authors left to fear, shock, unless by accident some injury be done the great axillary vessels.

In a recent paper of great thoroughness, and consequently valuable in a statistical way, Dennis, of New York, reports 71 cases of complete removal of the breast with but one death, and that from hemorrhagic diathesis. I have nine times removed the breast and opened the axilla without accident, and almost without shock, usually securing primary union, and getting the patient out of bed in a week.

These operations were all done within the last three years, and were done in private practice. The patients are living with but one exception; in this case death occurred the fourteenth month from carcinoma of the liver, there was also recurrence in the cicatrix. In one other case, in which a considerable portion of the wound was left to heal by granulation, owing to extreme infiltration the cicatrix has always had an unhealthy look and occasionally weeps a non-offensive serum, but the general health of the patient is wonderfully improved; indeed perfect but for some disabling of the arm on the affected side. And now, after quite two years, she feels that she was rescued from the grave. The other six patients are without any evidence of disease.

This number is far too small to consider as data, and the microscopical record of several of the cases is wanting, hence no detailed report is worth while. They merely help to show what may be gained by complete operation, and that the added danger is practically nil.

The recent case above referred to is progressing well.

With respect to the recurrence of the disease I shall say little.

The title of Dr. Dennis' paper, above referred to, is "Recurrence of Carcinoma of the Breast." He gives as the influences of recurrence:

1. The age of the growth.
2. The extent of infiltration.
3. The completeness of the operation.
4. Histological character of the carcinoma itself.

He claims that of this last cause he has made careful study, to find that in proportion as the histological character of the tumor varies from that of the surrounding structure it is malignant and recurrent. As a result of Dr. Dennis' operations, the percentage of cases surviving three years without recurrence is thirty. A very considerable proportion of the remaining were progressing well, but are not yet up to the three-year limit.

Thus, then, we have the practical aspect of the case:

Certain and early death without operation.

Accurate and early diagnosis in the doubtful cases by incision.

Safe and reassuring aid by complete operation.

A most encouraging hope of cure in one third of all cases.

To secure such results, however, is demanded early and complete operative steps, even in the most favorable looking cases. It is impossible to tell the extent of infiltration, or the amount of lymphatic involvement. The operation must be radical to the extreme.

There is a certain class of patients upon whom no capital operation can be undertaken. In addition, there are cases of carcinoma and sarcoma in which the infiltration and ulcerations are so extensive, in which vital structures are so invaded, or in which metastases are already present, which positively contra-indicate operation. These any wise surgeon will recognize. But of the other class of cases, which promise so much, there is every hope that care and persistence will determine results now past belief.

The operation: At the inner angle of the wound a

granulating surface heals with great ease, and no fear need be entertained in cutting away freely. It is always best to remove completely the skin under which the cellular tissue is infiltrated, even with inflammatory products. To dissect off such deposits leaves a thin flap which may slough, and less satisfactory repair is obtained than when a free open wound is made at once. All fascia, and all infiltrated muscle, even to the ribs, should be completely cut away, with resection of the bone if involved.

In firm but non-infiltrating tumors which dissect off freely the muscular surface should be left stripped of fat and fascia. The flaps adhere more readily to clean muscular surface, and sloughs are less likely under unfavorable conditions.

When the infiltration and ulceration are considerable, it is always imperative to make an incision to circumscribe all possible disease, without regard to the feasibility of getting flaps.

In removal of the glands the vessels should always be exposed by extending the incision to the insertion of the great pectoral muscle, and locating the axillary vein. All fat, fascia, and glandular tissue should be removed. The sub-scapular vein should be tied before division if it can be found. There will then be no hemorrhage, unless the muscles are divided. This step may be necessary when infiltration has invaded these structures; even the axillary vein has been resected when found diseased. The fingers should be passed up and under the pectoralis minor and between the pectoral muscles, and the sub-clavicular space searched for glands always.

The wound should be irrigated with 1–1,000 hot bichloride, then washed out with 1–3,000. A short drain should be put in the axilla and brought out through a counter-opening. The axillary wound should be closed as far as

approximation can be made; if the inner part of the wound can not be covered, it should then be left to granulate.

Skin grafts after Theirsch's method are not satisfactory, except under special surroundings. If the inner end is closed up a short tube is placed in this angle also. The tube should be removed in forty-eight hours unless otherwise indicated. The best material for sutures is silk-worm gut; next reliable catgut. Tension sutures of large silk are appropriate sometimes. The ordinary iodoform and gauze dressing is to be applied. The wound will be redressed in about twenty-four hours; the tubes so placed in the dressing that they can be taken out next day without disturbing the overlying gauze; the arm should be bound loosely in a sling. Redressing will depend on the nature of the wound; if there is no surface left to granulate, redressing will not be required unless some accident permits suppuration. The granulation surface must, however, be looked after. The patient may be allowed to be up about the fourth day, if she does ordinarily well. Even granulation cases I think do better out of bed.

If the resulting circatrix looks unhealing, or if the wound fails to heal, it is unwise to be in a hurry to operate, as such conditions frequently ultimately get well.

I have intended in this paper to urge the practical side of a case which demands in the interest of human life promptness and thoroughness at competent hands, wherein accuracy of diagnosis is a secondary consideration to readiness and completeness of work; and to record my belief, based on a confidence in the established principles of present surgical science, that it is little less than criminal to withhold, through overcautiousness, from suffering women that relief which will surely rescue many from the ravages of a loathsome and fatal malady, and will secure to many

others years of comfort; and which promises, through a diligent and courageous application of an efficient aid, even greater victories than the most sanguine dare predict.

DISCUSSION.

DR. W. L. RODMAN, of Louisville: I have been interested in the paper of Dr. Grant bearing on the surgical treatment of malignant disease of the breast. It has been shown by Butling, who has paid particular attention to the subject, and has given us the results of operations for malignant disease, that in no part of the body, save in the lip, does excision give as good results as it does in operations on the breast. The results attained from epithelioma of the lower lip are the only operations done in the body where the results are as good as in operations upon the breast.

As to the enlarged glands which are so often found in connection with malignant growths, I wish to say that I do not believe it is possible for the best diagnostician to detect the presence of enlarged glands in the axilla without opening the axilla; in fact I have seen some of the best surgeons in this country utterly fail to detect the presence of enlarged glands in the axilla without making a free incision. In all cases where malignant disease is suspected, especially in women who are fat and flabby, the axilla should be opened up and the glands picked away from the axillary vessels.

I did not hear the first part of the paper in which the doctor urged the cart-wheel or free incision. Where you make any attempt to remove a tumor from the breast, you should remove the breast entirely. It is unquestionably the best operation which can be practiced. At least ninety per cent of all tumors of the mammary gland are malignant, and by making a free incision and cutting a wide mark is the way in which you can hope to get a good result. I do not believe there can be any doubt as to the propriety of early operation in all of these cases. The sooner we see them, the more radically we operate upon them; the more tissue we remove, the better the result in the majority of cases.

A TYPICAL CASE FOR RAPID DILATATION.

By J. G. Carpenter, M. D.
Stanford, Ky.

Miss X., aged twenty years, former health good, family history excellent, has been a victim of hypertrophic rhinitis two years or more, and has developed the catarrhal diathesis, has nasal stenosis, headaches, asthenopia, impaired vision, and other subjective symptoms of former disease; besides has marked anemia and debility, constipation, painful defecation, irritation of the bladder, inactivity of the pelvic and abdominal organs, dyspepsia; for a year has had dysmenorrhea with various nervous reflexes, including tetanoid and opisthotonos preceding and attending each molimen, the tetanoid state lasting three to seven days, accompanied by the most extreme nervous prostration, pain, insomnia, headaches, and after subsidence of the period ten days or two weeks are spent in bed before temporary recovery is made from the dysmenorrheal disturbance; the whole cycle has repeated itself for half dozen or more periods, the last being always severer and more protracted than the former. During the paroxysm the thumbs are extended and drawn into palms of hands; the fingers, the index and second, are in a state of forced extension, the ring and little fingers semiflexed and widely separated; the feet assume forced extension; the arms and legs extended and rigid; the jaws are opened and closed with great difficulty; head drawn back and the trunk and spinal column rigid. The

tetany lasts through each period. A true picture of anguish, dejection, and sorrow is beheld.

The hypertrophic rhinitis and nasal stenosis were removed by snaring, cautery, and other local treatment, and patient placed on the best nerve and blood tonics, and the health greatly improved. The anemia was dissipated; the nasal and throat affections with their attending symptoms, asthenopia, impaired vision, cured. But the dysmenorrhea with its sequelæ continues unabated, and so far the patient has refused a digital and specular examination. Through the influence of strong argument and the fear of more suffering, impending danger, and loss of life, consent is given to have the local examination. The uterus is found retroverted, lying horizontal to the plane of pelvic inlet; os patulous, looks toward the bladder; the fundus lies in the concavity of the sacrum, diameter 1¼ inches; the uterus pressing on the anterior sacral nerves, interfering with defecation when the bowels are costive; the endometrium red, and secreting whites freely, showing a condition of subacute endometritis; the cervix conical and elongated; the ovaries are lower than normal, and quite tender and sensitive to digital touch and conjoined pressure. Patient was placed in the genu-pectoral posture, uterus replaced with fingers in vagina, and perineum retracted, vagina inflated, then patient placed in recumbent posture and made to lie on face and sides for a week, using every day a vaginal injection of hot water, then for four weeks tampons with elastic wool saturated in glycerine. A two-per-cent solution of carbolic acid, with 1 part tr. iodine to 7 glycerine, applied to endometrium every five days; uterus was restored to normal position, general health improved, and a Thomas retroversion pessary is substituted for elastic wool, and gives comfort. Condition of patient very much improved, but for two periods the tetany with the severe dysmenor-

rhea returns and lasts about three days. The dysmenorrhea being no better, the tetany continuing to return, the uterus being free from adhesions, the absence of salpingitis ovaritis and other intra-pelvic complications, and patient yet unrelieved, though a sound or applicator will pass tightly through the inner os, the case is now considered a typical one for rapid dilatation (Goodell's modification of Ellenger being far superior to other methods).

The operation was done under the local use of cocaine and internal use of whisky, and without great pain, yet by pushing the whisky its general anesthetic effect is had and the rapid dilatation becomes painless. Five days after her period rapid dilatation was done, repeated every ten days or three times before the recurrence of next period. This molimen occurs free from pain, tetany, and other reflexes. Menstruation is natural in quantity, time, duration, and color.

Miss X. is elated with success of treatment, says she is well, and stops treatment; but the next period has all the former dysmenorrhea, tetany, and reflexes; but again, shocked with fear for worse ills, pleads for rapid dilatation and treatment of endometrium, which is done every seven to ten days, two to five days before and after period, for four months, when recovery is complete.

While this case has been cured in the end by rapid dilatation, yet had dilatation been practiced earlier a far worse state of affairs would have been caused, numerous intra-pelvic complications produced, and the last state would have been worse than the first, since lesions would have resulted that would have demanded abdominal section as a radical, conservative, life-saving measure.

Rapid dilatation is a good thing—yet it is a bad thing—a dangerous surgical remedy in the hands of the routinist who is unskilled, the young, inexperienced physician, and

the competent but reckless doctor; like trachelorraphy, curetting, caustic applications, the uterine sound to the endometrium, and the electrode, it has placed to its credit a long series of major operations, and some deaths. Unless doctors know the when, how, and what, dilatation should never be done by them. Physicians, through want of skill, the desire and pluck to be doing something, not knowing the when, grope their way in the dark, practice minor gynecology, tinker and tinker, become "supply stores," wholesale, or manufacture cases for the abdominal or pelvic surgeon. There are cases demanding rapid dilatation or other minor gynecological measures, and the skillful physician would be derelict of duty not to use them; their proper use must be commended, their improper use condemned.

Permit me to say, without egotism, that unfortunately for humanity so many young graduates, as well as senior members of the profession, appropriate to themselves the stupendous title, gynecologist, and seem to think the essentials to a successful practice and fortune are the speculum and uterine sound, curette, Goodell's dilator, and Thomas' retroversion pessary, and handle the sound with as much recklessness as the dude twirls his cane, and imagine all intra-pelvic diseases are uterine.

The *ultima thulc* is fewer and better practitioners, a less number of medical students, fewer and better medical schools, with enlarged hospital experience, and instead of three years' course of study being compulsory, make it five years or longer, with abundant clinical or hospital experience, and gynecology taught and learned before it is put into practice. Unfortunately only the minority of every graduating class have had proper clinical experience with which to begin practice; the majority seldom reach mediocrity—they start wrong, go wrong, and end wrong.

There are cases demanding rapid dilatation and other

measures, or both, and the physician would be derelict of duty not to use them. Their proper use must be commended, their improper use condemned.

The scriptural adage, "Be temperate in all things," is highly appropriate in the practice of minor gynecology. That the minor gynecologist too often ignores or is incompetent to detect existing intra-pelvic diseases when practicing these methods, or by the practice produces intra-pelvic diseases, there can be no doubt. Just in proportion to the abuse of rapid dilatation, and curetting, and other minor measures does he become a feeder to the major gynecologist or abdominal and pelvic surgeon. Only a few weeks' observation and study and analysis of cases in the practice of men in the profession like Drs. Joseph M. Price, Charles B. Penrose, E. E. Montgomery, and Hoffman, of Philadelphia, and T. A. Emmet, of New York, would convince any "doubting Thomas" that certain causes of major pelvic troubles are traceable to minor gynecology. Yea, we do not have to go to New York or Philadelphia to see the awful and calamitous work of the minor gynecologist; it can be found in Kentucky.

In one class of patients you will find the major pelvic troubles traceable to a dirty confinement or too early leaving bed and resuming household duties, or hardships, or other minor imprudences; to imprudences during the menstrual molimen, and frequent abortions; others have had a gonorrheal infection or sexual abuse; others date origin of the ailment to an improperly adjusted pessary, to the use of the sound or probe, caustic applications to the endometrium or os; others to operations on cervix (trachelorraphy) or to electrode; others to rapid dilatation or curetting, etc. That the general practitioner too often generalizes in place of specializing, and the specialist too often specializes instead of generalizing, there can be no doubt, and that the gyne-

cological tinker tinkers with his patients until major pelvic troubles arise and his patients pass into the hands of the pelvic surgeon is self-evident.

These major pelvic troubles, many of them, like Banquo's ghost, will continue to arise, because they will not down or cease until the pseudo-gynecologist ceases to tinker. These questions may be asked: Is forcible dilatation and curetting ever essential; and when are they indicated? Answer, yes. When and by whom should it be used? It should be used by the aseptic physician or surgeon who has been taught by practical experience and differentiation the *pros* and *cons* for these measures, and as a *dernier ressort;* but sometimes, as in cases of hemorrhage and putrid placental infection, their use as means of primary remedial importance must be considered in order to save life and prevent sepsis. With aseptic instruments, through the aseptic vagina, os, and cervix, when dilatation is accomplished, make the endometrium aseptic with hot water, the bichloride or boric solutions, iodine and glycerine mixture, Churchill tincture of iodine, the liquid vaseline and oil of eucalyptol or menthol solutions, the insufflation of bismuth subnitrate or iodoform. The vagina should be kept aseptic *pro re nata* by hot antiseptic douches and the aseptic vulva pad to prevent decomposition of the uterine discharge and infection. Before forcible dilatation is resorted to the patient should be given a hot-water and soap bath, purged freely, and placed in bed at rest twenty-four or forty-eight hours, and the vagina douched with hot antiseptics every six or twelve hours. After the operation the patient should be kept at rest in bed one or more days until all manifestations of a local or constitutional reaction have subsided and she is free from danger. The operation should never be done in the private or consulting office, and never by the pseudo-

gynecologist; nor oftener than at intervals of ten or fourteen days, at least five days before and after the menses, and when the disease is limited to the uterus *per se*, and there is an entire absence of disease in the pelvis.

These measures, although sometimes indicated and though no intra-pelvic inflammation is present, may do and have done incalculable harm by setting up pelvic diseases. Even though slight, no dilatation should be practiced unless absolutely required by patient to cure or to save life. Rapid dilatation and curetting are distinct traumatisms, and all the dangers incident to septic absorption may attend them that follow any other violent procedure.

Dr. Joseph Price states in reference to rapid dilatation: "This conclusion, reached inferentially, has been abundantly confirmed on the operating-table by much of my later pelvic work. In a number of cases with a history of preceding dilatation the after-operation has exhibited an inflammatory condition of affairs as complicated as any other. In my experience some of the dilatations were done with pre-existing disease which was made worse by the interference, while others were done simply to relieve dysmenorrhea, and resulted in the establishment of a complicated surgical disease in which operation was necessary to save life. All in all, I believe that, judged simply by its remoter effects, the operation of rapid dilatation is a dangerous one, and results oftener in subsequent harm than in lasting good."

Dr. Price, in referring to the article of a minor gynecologist, states in debate (Philadelphia County Medical Society): "He is the great mischief-doer. He tinkers, dilates, curettes, passes the sound, and in four to six weeks he (Dr. Price) gets a telegram to come and open the abdomen to save the patient's life; that the woman is leaking; that she has a pulse of 130 to 140, with temperature of 104°.

This recurs weekly. Also stated, of specimens in a jar removed during the month of August, fifty per cent followed dilatation, closure of cervix, the use of the sound and curette. These specimens have come from four clinics in this city (Philadelphia) and from ten prominent gynecologists. They all had sections to save life, and all were greatly complicated operations. These fibroids in the jar had pus in them, the result of electricity. This private office work had a great deal to do with it. Many of these men are simply cervix feelers, and never find any thing above it. There may be a mass larger than the uterus on one or both sides which they fail to find. They are not anxious to find them, and would not be troubled by them or capable of dealing with them if they struck them accidentally."

This state of affairs existing in Philadelphia! The havoc wrought by the minor gynecologist could be doubtless estimated *ad infinitum* throughout the world.

Dr. Emmet for a decade or more gave the danger signals of minor gynecology ignorantly and thoughtlessly practiced, but the warning has only been heeded and appreciated by the few. The many, it might be truthfully said, have gone on their way in midnight darkness, causing pain and anguish, destroying important organs, wrecking constitutions, and losing of life. Emmet's Principles and Practice of Gynecology is replete with aphorisms of wisdom, lighting the pathway all along the line, and is to the major gynecologist a "Sermon on the Mount;" but the pseudo-gynecologist or gynecological tinkers are deaf and myopic, and would not turn from the error of their way "though they had Moses and the Prophets to warn them."

When so skillful and erudite a surgeon as Dr. Emmet has had harmful results follow forcible dilatation and curetting, with all his care, diagnostic and operative skill, pains-

taking and prophylactic measures, one is forced to believe inferentially that other surgeons have certainly had experience similar to Dr. Emmet if they followed up their cases, corralled them, and hunted for after-claps.

Indications for Dilatation. Dysmenorrhea due to cervical stenosis; its cause should be reached by exclusion. There is sometimes primary stenosis, all other conditions being normal; the mucous membrane engorged at the menstrual nisus constricts the internal os, and when there is endo-cervical and corporeal metritis in the virgin or nulli-para, the stenosis may become much aggravated, especially if, in addition to the hypertrophy and hyperdistension of the mucous crypts with closed orifices and pent-up sections, there is hyperplasia of the submucous connective tissue. By one familiar with the occlusion of the nasal chambers from chronic and hypertrophic rhinitis, it can be readily perceived how a similar condition of the uterine mucous membrane could cause and aggravate a stenosis of the internal os, and how the displaced uterus in the form of versions, flexions, and obliquities, single or combined, could cause stenosis like the flexed or dislocated partition of the nose, and be amenable to restitution and dilatation to straighten the uterine canal, making it more patulous; the pressure opening the orifices and emptying the distended crypts of their contents, allowing their walls to collapse, besides causing absorption of effused fluid and unorganized lymph. By straightening the uterus we also straighten the arteries, allowing increased nutrition; by rectifying the veins we relieve passive congestion, removing the engorgement from the overloaded capillaries, and in a similar way we increase the functions of the lymph channels. Not only may an enlarged uterus be benefited in this way, but also a uterus of natural size afflicted with endometritis. When the walls of a displaced uterus are straightened by

dilatation the womb is much more easily retained in normal position, and gets more patulous at the internal os. Some operators would recommend dilatation for infantile uteri, to increase their nutrition and size, but we doubt the expediency and believe the weight of authority is against it, since their cause is tubal and ovarian. After dilatation the distended crypts can be scarified or punctured. Dilatation is often essential for diagnosis of intra-uterine growths and foreign bodies, and as a preparatory step to curetting. Emmet speaks of the beneficial effects of forcible dilatation for malarial congestive hypertrophy of the uterus. We can also often obtain information of the pressure, size, and positions of intra-uterine growths, and use it as a preparatory step to removal of them. Dilatation is essential to wash out the uterus when there is sepsis, and in conjunction with curetting to remove septic material and arrest hemorrhage. Rapid dilatation should never be used unless the cause or case demanding it is urgent. Emmet states if pregnancy exists and a tent has already been used, or if there should be a hemorrhage, there will be less risk from rapid dilatation than under other circumstances. It is always attended with the danger of exciting inflammation.

Inflammatory disease may extend by continuity of tissue into the tubes, ovaries, and peritoneum from the uterus, producing peri- or para-metritis, or these can be caused by intra-uterine instrumentation *per se*, or the dilator. If uteri free from intra-pelvic complications only were dilated and curetted under proper conditions, and were a thorough and intelligent digital and conjoined manipulation made in every case, before instrumental treatment is used, pelvic disease would be detected, and non-interference would be the rule, and major pelvic operations to save life would be less frequent.

When the minor gynecologist ceases to tinker there will

be far more tubes and ovaries remaining in the pelvis. It is to be hoped that the millenium is at hand, that the "goats will be separated from the sheep," and to the pseudo-gynecologist the scriptural injunction proclaimed, "Depart, ye cursed, I never knew you," will be fulfilled, and that woman will keep her normal uterine appendages instead of having them removed and placed in bottles. The more experienced and skilled the diagnosis is, the less often will he resort to dilatation and other minor measures; conversely, the more ignorant and unskilled the operator, the oftener will he use these measures, and greater will be the disaster to health, happiness, and life.

On account of the asthenopia and impaired vision the oculist would doubtless have said, we will cure by putting glasses on her; the rhinologist would use the galvano-cautery; the neurologist would have said she has spinal irritation, anemia, or congestion, extended to the ascending parietal and first frontal convolution; the general practitioner, she has gastric dyspepsia, torpid liver, and gastrodynia, or hyperesthesia; the rectal specialist, she has partial rectal occlusion or stricture; the minor gynecologist, she has ulcerated os, and needs nitrate of silver; genito-urinary specialist, chronic cystitis or calculus. But the specialist would weigh all the factors in the case, reason from cause to effect, survey the whole field, hunt for pathological lesions, like the true Christian searching the Scriptures for the truth; step by step turning on the light, drawing the line between healthy and unhealthy conditions, between a neurosis or reflex and the diseased organ itself, until the bottom rock or foundation stone of the disease is reached by differentiation or exclusion, and when the diagnosis of the disease, with or without complications, is made, he would treat them by the best and most recently approved methods, and restore his patient to health.

SOME OBSERVATIONS ON SQUINT.

By William B. Meany, M. D.
Washington, D. C.

While errors of retraction are important factors in the production of squint, yet the surgeon who neglects to keep strict account of the disturbed muscular functions will find the result of his attempts to correct the obliquity entirely negative.

Surgical interference for the correction of squint is a binocular proceeding, and should only be resorted to after a thorough study of the motility of each eye separately, and both as regards their relation and their reciprocal movements.

A thorough consideration of the factors influencing the movements of the eye in the commencement will aid us materially in the treatment.

The factors favoring convergence are, lowering of the plane of vision, fixing near objects, exercising of the accommodation; while the absence of fixation for near objects, raising the eyes, repose of the accommodation by the aid of dark smoked glasses, the instillation of atropine, paralysis of the accommodation, and diminished convergence favor divergence. Every measure taken to re-establish binocular vision facilitates the cure in a strabismic subject. If, for example, a convergent squint (having developed at an early period of life) be operated upon without first submitting the patient to a tonic treatment, orthoptic

exercises, and especially the stereoscope, or the use of other well-known measures to further diminish the squint, we may expect not only a return of the original trouble, but we can almost with a certainty predict an overcorrection resulting in a disfiguring divergent squint that may cause an endless amount of trouble to counteract.

By submitting a child to the therapeutic treatment detailed above, I have witnessed a squint of 30° rapidly diminish to 15°. We may proceed surgically without fear to correct the remaining 15° of convergence, having derived from therapeutic measures all the advantages they have furnished. The following case may prove interesting:

A young man, nineteen years of age, applied for treatment, as he states it, "for loss of sight in the right eye." Ophthalmoscope examination reveals:

Left eye, hyperopia total, ...	3.5	V=1
Right eye, hyperopia total, ...	3.5	V=0
Right eye, convergent strabismus apparent, ...	52°	

Angle K (angle between the lens of fixation and the radius of the cornea, which passes through the pupil)+10°.

Therefore we have a case with a total convergent strabismus of 52+10=62°, an exceptionally high degree. Field of fixation measured by the perimeter:

Left Eye.		Right Eye.	
External.	Internal.	Internal.	External.
32	47	47	34
Instead of normal:			
47	47	47	47

It will be readily observed that the field of fixation is strongly limited to the outer side of both eyes. Binocular vision absolutely abolished, and probably never existed.

It was found impossible to provoke the union of the

two stereoscopic images or even the simultaneous vision of such with the stereoscope. For prudential reasons chloroform was administered.

A tenotomy of the internal and advancement of the external recti muscles was practiced in the right eye. The internal rectus muscle was found to be enlarged and exceedingly strong; the external rectus very weak, narrow, and flattened. A slight resection of the tendon was made. Atropine having been instilled, both eyes were securely bandaged, antiseptic dressings of mercuric bichloride 1 to 5,000 being used. Both eyes were kept bandaged until the removal of the thread on the fourth day. The eye operated upon was again bandaged, the opposite was left free and provided with its connecting glass +6D. The fifth day after the operation the bandage was removed and a +6D glass provided for the right eye.

The hyperopia proved to be of six diopters in each eye. On a careful examination of the eyes a slight tendency to convergence persisted. The eyes were again examined the ninth day after the operation, and instead of a total apparent strabismus of 62°, as existed before treatment, it was found to be one of 10° only.

With a stereoscope furnished with a convex, 12 diopters for each eye, the patient unites the images when they are separated by a distance of 60 millimeters.

Stereoscopic exercises were ordered to be continued daily. After several days' use of the stereoscope the patient, having learned how to observe his optical impressions, indicates (one eye being covered with a colored glass) distinctly a monocular diplopia for each eye. The two monocular images appeared to be very near each other, separated by six or seven centimeters, when the object, a flame, is placed a distance of five meters.

The eighteenth day after the operation, with a colored

glass, revealed, first, crossed diplopia, which was corrected by a prism of 4°; immediately afterward, without apparent change in the direction of the eyes, homonymous diplopia appeared that was corrected by a prism of 10°, corresponding to a convergent squint of 5°. It was observed that the patient appeared to fix by alternating with two different parts of the retinæ. This monocular diplopia shows by the fact of the strabismus two places of perception, or better, two maculæ are formed in each eye, and explains why the following days the patient developed a homonymous and sometimes a crossed diplopia.

Twenty-eight days after this patient was operated on the apparent strabismus had practically disappeared; with a colored glass a distant flame, though first seen in homonymous diplopia, the patient quickly unites with the two images.

The binocular vision persists up to a ½ m. (14 cm.), so that with hardly a month's treatment he has obtained almost normal amplitude of convergence.

$$\begin{matrix} P\ c=7\ m\ a \\ R\ c=o\ m\ a \end{matrix} \quad 7\ a\ c=m\ a$$

The patient now unites the stereoscopic images with a distance of 73 mm., which shows the increasing strength of the diverging power with simultaneous contraction of both external recti muscles.

A one to two hundred solution of atropine has been dropped into the eyes daily since the operation.

The following is a complete record of the field of fixation:

Temple. External.	Left Eye; Nose. Internal.	Right Eye. Internal.	Temple. External.
	Before operation:		
32	47	47	34
	After operation:		
35	45 (9th day)	45	54
37	45 (18th day)	45	45
40	43 (28th day)	42	40

Does not the history of the foregoing case illustrate that a cure was possible only with a combined tenotomy of the internal and advancement of the external recti muscles, followed by orthoptic and stereoscopic exercises as well as the correction of the existing error of refraction? I am quite sure the results would not have been the same had we dispensed with any one of the measures resorted to in the treatment.

THE MODERN TREATMENT OF TRACHOMA.

By W. CHEATHAM, M. D.
Louisville, Ky.

The modern treatment of this most formidable disease of the conjunctiva with which we have to deal has rendered its management much more easy to the ophthalmologist. It is not my intention in this article to give a review of the different methods pursued to reach the one end, but to speak of the one giving me the most satisfactory results. A patient with acute trachoma or true granular lids applies for treatment. What is to be done? Under the old methods most of them will go on to chronic granulation with all its bad results. I take a cataract knife because it is cleaner than the thin-bladed "*sillenneur*" of Johnson, and will give about as good results, and scarify well the palpebral and cul-de-sac conjunctiva. I then, with a pair of Knapp's forceps, grasp the conjunctiva and compress and squeeze out all trachomatous bodies and enlarged follicles; treat upper and lower lid alike. I then irrigate thoroughly with boric acid solution, and send the patient home with directions to use the solution every two hours in an "eye bath," and if there is much reaction to apply cold cloths. Usually there is no reaction, and but little after discomfort. I do not use general anesthesia; instead instill several times a ten-per-cent solution of cocaine muriate. But little treatment outside of this bath is given for several days. If there are any granulations left the operation

must be repeated, or the usual old treatment in such cases can be tried for several days. Under this treatment cases which used to take months for relief are now cured in as many weeks, and with but little or no damage to vision. I operated several days ago on a case of trachoma, with the cul-de-sacs filled with enlarged follicles. When the lids were everted great rolls would present, larger than a lead pencil. Under slight trimming and compression, this case was cured in two weeks, with vision $\frac{20}{20}$, which under the old treatment would have been on hand for months, with vision much impaired as a result. There is some difference in the management of acute and chronic granular lids and the follicular form. But when the modern method is pursued the result as compared to the old is simply marvelous, not only in length of time of treatment, but in result. The operation is a very short one, and I find patients anxious to have it performed. When there is much pannus I still use pulverized jequirity. My faith in this remedy in suitable cases is increasing daily.

PREVENTIVE MEDICINE RESPECTING CONSTIPATION.

By Lyman Beecher Todd, M. D.
Lexington, Ky.

Desiring that we keep abreast with this utilitarian age in which we live, when *cui bono* is the watchword of the hour, I purpose to consider a subject which constantly engages your attention; which severely taxes the skill and therapeutic resources of the physician and often baffles both; which meets you in your daily round of professional life; which awaits your coming, and assails you in the houses you enter, when and where relief is asked of you from troubles almost universal and always distressing, to try to prevent and to avert which is the bounden duty and desire of every conscientious physician.

Although in text-books upon your library shelves preventive medicine respecting constipation is not classified among principal diseases, I nevertheless shall venture to call and to consider it a fundamental disease.

The importance of the subject of constipation, acute and chronic, is commensurate with its attendant consequences of discomfiture, pain, distress, and disability. And I take it that the importance of this disorder of constipation and consequences will in your minds be greatly increased when a moment's reflection will remind you that diseases caused directly by constipation demand the services and skill of (1) the general practitioner; (2) the neurologist; (3) the

laparotomist; (4) the rectal surgeon; (5) the dermatologist; (6) the gynecologist. And I doubt not but, while this enumeration was being made, cases in your own individual practice referred to one or more of these specialists have occurred to the minds of many of you which confirm and emphasize this important appalling statement. I do not propose to weary you with minute and descriptive detail of the anatomical arrangement and construction, nor of the physiological uses and functions of the portions of the intestinal tube involved in constipation; with this you became familiar in your student's career, and have become even more so by your observation and experience as physicians and surgeons.

Constipation, as you are aware, is a condition of the bowels in which the evacuations are less frequent or in less quantity than in health, and may be temporary or habitual. Torpor of the colon is one of the most common systemic conditions of habitual constipation. Habit is one of the most frequent causes of this complaint, arising from the fact that, by means of our individual control over the sphincter ani muscle, nature has endowed us to a considerable extent with the power of regulating the alvine discharges and of resisting the solicitations of nature at inconvenient seasons, while the bowel, thus habituated to the presence of feculated matter, feels the loss of its healthy stimulation, and at length ceases to be excited into action. The rectum, the lowest and largest part of the large intestines, is not constructed to retain any thing for an indefinite period, but only to transmit or throw out what descends from the colon into it.

When compelled to retain hardening matter it contracts upon it, rendering it less easy of subsequent removal. At the same time the coats of the walls of the rectum through its mucous membrane will absorb much of the watery

material present. The blood becomes poisoned, and the disposition of the bowel to empty itself of such impacted and hard masses is gradually lessened, thus establishing a habit of constipation.

The principal cases of constipation are neglect, improper food, sedentary habits, disease.

Symptoms. Headache, dizziness, giddiness, languor, nervous excitability, irritability, nausea, biliousness, eruption of the skin, loss of appetite.

Persons chiefly subject to this disorder are students, writers, professional and business men whose calling necessitates an exhaustive use of nerve force; those of bilious, phlegmatic temperament, whose hepatic and other glands are torpid; women who are closely confined to office work, duty in stores and manufactories, and whose hurrying to time causes neglect of nature's call. Women are more subject to constipation than men, for many and obvious reasons. Women are more careless about answering the calls of nature than men, and yet there are valid reasons why they should exercise greater care.

The mention of persons liable to and subjects of constipation suggests remedies and means of prevention and alleviation thereof. To the studious, and to those of sedentary employment, exercise, regular and judicious, in fresh air, and proper diet are absolutely required, even if change of occupation and location should become necessary. Lord Palmerston formulated this idea in a very happy manner when he said that he "considered the best thing for the *inside* of a man, especially the bowels, was the outside of a horse." This seems imperative when we consider the consequences or neglect thereof, viz., inflammation, prolapse and paresis of the bowels, creation of piles and hemorrhoids, tendency to produce hernia by straining or forcing an evacuation, intussusception, fissure both in adults and in children under two years.

The collection of hardening material in the intestine becomes so impacted that urgent measures and very painful and dangerous surgical operations are required to remove the same. And from constipation and its attendant evils and distress none are exempt. It respects and spares no age, race, nor class nor condition in life, claiming as its victims those of all years from the infant in the cradle to decrepid old age. Time and the proprieties of this occasion permit me to touch only the tops of things, and to indicate important points, and to make suggestions which most probably you anticipate and appreciate.

This paper, brief and imperfect as it is, is presented with an abiding conviction that the subject of constipation in relation to, indeed productive of, abnormal and diseased conditions of female organs has not received the attention from physicians that its importance deserves and demands. It is slighted by lecturers in our schools; it is omitted in text-books; it is crowded out of the journals, and passed by inconsiderately by ourselves.

Root, in The Southern Medical Record, calls attention to constipation as a frequent factor in pelvic diseases in women. The habit of constipation is largely due to carelessness, especially in childhood. In the adult female constipation is very frequent, and many of its symptoms point to pelvic disease; pain in the back, pain in the top and back of the head, a feeling of weight in the limbs, dysmenorrhea and leucorrhea, subjecting the patient to local treatment, when changes in the mode of life with relief of constipation would restore health. It is also very evident that this disease acts as a most active factor in the production of pelvic disease in women; for where endocervicitis and even retroversion exist, rapid improvement is made as soon as constipation is relieved. Pelvic disease results from constipation through pressure, and keeping up a con-

stant condition of sluggishness of the pelvic circulation, amounting practically to a chronic congestion. Many cases of pelvic disease can be cured by the proper regulation of the bowels, and he cites cases in proof of this statement.

Two years ago there appeared in the London Lancet an able and very instructive article upon this subject from the pen of the eminent Sir Alfred B. Garrod. And a late number of the *Archives Kinderheilkunde* contained a learned and practical paper covering a wider sphere upon this subject from Professor A. O. Karnitzky. Leucorrhea is, according to Dr. Louis Bauer, often due solely to constipation, hence clearance of the bowels of their fecal contents is in many cases the chief and most effective treatment of that troublesome disorder.

Dr. Robert A. Murray read a paper at the recent meeting of the New York Academy of Medicine: When he considered the intimate anatomical connection between the rectum and the genital organs, it would not seem strange that disease in one should cause disease or symptoms in the other.

Constipation, while not exactly a disease, was present in a large proportion of the cases which came under the care of the gynecologist, and was the cause of much trouble. The first symptom present in most cases was pain in the left side over the region of the ovary, then flatulence and constipation. By recalling the anatomical relations one could rapidly understand why the patient should have the pain in this region. The rectum lay on that side, the ovary and tube were almost in contact with it, constipation gave rise to congestion of the pampiniform plexus and vessels in the neighborhood. To relieve engorgement of these veins it was necessary to empty the rectum. The only apparent solution of posterior displacement in many virgins was pressure during defecation when there existed

chronic constipation. Relieve the pressure by correcting the constipation, and the patient ceased to complain. In long-continued obstruction to the pelvic circulation caused by chronic constipation and uterine displacement we found hemorrhoids and an inflamed condition of the lower gut. Cathartics in these cases were likely to cause greater suffering by renewing inflammatory symptoms; relief would not be experienced until the communication between the genital and portal circulations had been made free: (1) by replacing uterus; (2) by use of rectal enemata.

In virgins chronic constipation also often caused a dragging and falling sensation in the pelvis, by giving rise to congestion and varicosity of the vaginal and uterine veins, and led in time by such congestion, and by the pressure forward of the distended gut against the vagina, to retroversion and prolapsus. In this condition correction of the retroversion did not give relief, since the starting cause was not retroversion but rectocele. Cure the chronic constipation and the other symptoms would disappear. He had several cases in which this rectal distension had given rise to slight fissures at the entrance to the vagina, the passage of hard feces distending the rectum and sphincter, also stretching the vaginal fissures and causing much pain. A cure of the fissures could be effected only by overcoming the constipation.

Remedies beneficial in preventing and relieving acute and chronic constipation are careful, regular, and patient attention to nature's calls. One daily evacuation of the bowels is natural and usually all that is required in the majority of cases. While each one must be a law unto one's self, the demands of nature can not be disregarded with impunity. It is best to cultivate a habit of such movement at a regular and fixed time, that is, at the most convenient time of each day that is consistent with the

calling of the individual. Among the pure drops of wisdom that fall in proverbs from the accumulated experience of ages, none is safer than to keep the head cool, the feet warm, and the bowels open.

Dr. Beer has recently recommended mechanical dilatation of the sphincter ani in the treatment of chronic constipation. In practicing the manipulations he advises us to proceed gradually, both as regards the duration of the sitting and the amount of force exerted. Attention should be paid during the dilatation to the rhythmical contractions of the sphincter, which are partly provoked by the respiratory movements and partly result from automatic reflex nervous influences. In most cases considerable improvement was manifested even after eight or ten sittings. Although previously large doses of purgatives were required, defecation soon became regular, and small hemorrhoidal nodules disappeared.

Numerous medical and therapeutical agents are employed to great advantage. Drastic cathartics are considered injurious, but gentle laxatives combining tonicity are rather to be recommended. Enemata judiciously and regularly administered have produced most satisfactory results, especially in sluggish alvine functions of infants and young school-girls, among which classes there exists this condition probably more frequently than in almost any other. In such instances the family physician should give to mothers and nurses very plain and positively explicit instructions regarding the distressing consequences of constipation, that they should feel it to be a duty to know that daily evacuation of the bowels should be as regular and as necessary as the taking of daily meals.

Dr. A. O. Karnitzky calls attention to the fact that massage has been but little employed in the constipation of infants, although it removes both this condition and the

disease which gives rise to it, that is, atony of the intestines. He has employed this method with success in acute and chronic constipation in new-born and older children, but states that in order to obtain this result it must be used properly and for a sufficient length of time. The technique of massage in children differs in no essential particular from that in adults, although it should be modified in conformity with the position of the digestive organs at various periods of the child's life. Attention should therefore be paid to the anatomical position of the stomach and intestines in the new-born, especially on the left side, and to the position of the descending colon and sigmoid flexure. The manipulations need not be practiced on the right side, because the main cause of habitual constipation in children is the considerable length of the lower portion of the large intestine, aside from the weak development of the intestinal muscular layer. In the new-born the massage should be employed when the child is nursing, in order to prevent crying and marked tension of the abdominal muscles. The application of massage for as short a time as three minutes frequently gives the desired effect. The sitting should not last more than ten minutes. (*Arch. f. Kinderheilkunde.*)

Electricity, promotive of peristaltic action of the intestines in children and adults, has been highly recommended and used with satisfactory results.

Suppositories are safe, convenient, comforting, and satisfactory aperients, particularly where the constipation is attended with piles and hemorrhoids. Many admirable and useful suppositories suited to various conditions and affections of the lower bowel have been furnished, which have proved very beneficial in the hands of our professional brethren in private, hospital, and infirmary practice. The combination which has given me good results is glycerine, sulphur, nux, and henbane.

Food. As a valuable means of preventing and of relieving constipation diet should neither be overlooked nor forgotten. Nutritious articles of food should be regularly taken, well cooked and eaten slowly; a generous and general mixed diet containing sufficient moisture. Also animal food, certain vegetables, but especially fresh, acidulous fruits, in season and out of season.

I thank you, my Fellows of the Kentucky State Medical Society, for your kind and patient attention to this subject. Did I hear you say that it was *homely?* Rather it surely is a *home-troubling* subject. Probably you said that it was old and trite; old it may be, but like truth it perpetually renews its youth. And I conclude as I began, with direct reference to preventive medicine, and venture to repeat that the alleviation and prevention of acute and chronic constipation is deserving of your fostering care and beneficial efforts—continuous and untiring efforts. More than once have I called your attention to the great importance of preventive medicine as the leading, the vital question of the times, which should receive your most earnest thought and elicit your cordial co-operation.

And on the field of battle which preventive medicine is now and everywhere waging against the ills to which flesh is heir, the banner of preventive constipation is well at the front. Indeed I feel confident, and I do greatly rejoice in this assurance, that when the enthusiastic physician who is ever loyal to the guide, who keeps her escutcheon fair and stainless, who is ever jealous of her honor, shall proudly make mention of her achievements and triumphs for the benefit of suffering humanity, the prevention of constipation will not then be omitted.

ABSCESS OF LIVER: REMARKS ON SURGICAL TREATMENT.

By M. T. Scott, A. M., M. D.
Lexington, Ky.

On October 30, 1891, I was asked by Dr. Barnes, of Nicholasville, Ky., to see with him Carrie G., aged twenty-three, married, white.

Being an ignorant woman, and no one physician having been in constant attendance during her illness, it was impossible to get a satisfactory history of the case. About eighteen months prior to my visit, while running, she fell and struck her right side on a large stone. The point of injury was over lower thoracic region below the nipple. The pain was sufficiently severe to confine her to bed for six weeks. Though still sore and tender she then commenced attending to her household duties. Within the next ten days or two weeks a phlegmon appeared over the site of original injury. Fluctuation was soon after detected by a physician living in the neighborhood. He made two incisions and evacuated a large quantity of pus, she thinks nearly one gallon. Notwithstanding the continuous and copious flow she was married a month later. In six or eight weeks she became pregnant, and in spite of the copious and exhausting drain went to full term and was safely delivered. During her pregnancy she suffered much from hectic, as shown by sweats, rigors, and fever. I found her about midday, October 30, 1891, with a flushed face,

temperature 101.75°; pulse 120; excessively nervous. In standing she bent forward very much in the posture assumed by one with abdominal cramp.

She removed a foul, ill-smelling pad from two freely discharging sinuses, two inches apart, in ninth intercostal space in mammary line. Pressure anywhere in epigastric or either hypochondriac region caused the free flow of highly offensive pus mingled with blood. Her nervousness was so great that she would not allow me even to attempt to map out the liver, much less introduce a probe into the pus tracks. She was at a railway station twenty miles from Lexington. Expressing a willingness to come to that city and enter the hospital, I deferred any further examination until I could allay her fears and get her away from her ignorant friends, who, as usual, added to her alarm. Despite all my entreaties she continued to nurse her five months' old infant during the entire time that she was under my observation. Her baby was remarkably stout and vigorous, showing no bad symptoms from the nutriment derived from so polluted a source. The first few days of the patient's hospital life were devoted to attempts to accustom her to civilization, endeavors to secure external cleanliness and regulation of diet and excretions. The surface of the abdomen was thickly encrusted with dried pus and blood. Her timidity was so great that she forbade all attempt at irrigation. After a number of washings we secured an abdominal surface, which indeed appeared beautiful outwardly, but was "within (I was satisfied) full of dead bones and of all uncleanliness."

On November 10, 1891, assisted by Drs. Barnes, Skillman, Falconer, Moore, and others, I proceeded to make my first exploration of the wound. The tissues between the openings were divided, a common track ran along the ninth intercostal space to angle formed by junction of ninth and

tenth ribs, where it turned backward and entered the chest cavity through an opening one third of an inch in diameter. This was enlarged by bone nippers, considerable sections of cartilage and necrotic rib being removed.

Further exploration revealed a pus pouch the size of a large orange at base of pleura, cut off from the general cavity by adhesions. An opening large enough to admit the index finger was found from this cavity through the diaphragm and leading down into the liver. This latter cavity, as near as I could determine by a sound, was as large as a quart cup. Both pus sacs were thoroughly irrigated and flushed with hydrogen peroxide. A double rubber drainage-tube was inserted, extending into the hepatic pocket. Operation lasted about thirty minutes. Patient was put between warm blankets, surrounded by hot bottles, and given stimulants. The shock was very marked. Temperature 95.5°; pulse running to 135. Reaction came on slowly. At no time did the temperature go above 101°. The discharge from the first lost its offensive character. While copious for awhile, it gradually diminished until the removal of the tube on the thirteenth day, when it was practically nothing. She sat up in bed on the fifth day. The wound entirely closed by the twenty-first day. She rapidly regained her flesh and strength, and assumed the erect posture. She was kept under observation for four months. Her liver had assumed its normal size and shape, and there was no suspicion of any lurking mischief.

Remarks: The operative treatment of abscesses of the liver has, together with all other surgical procedures, undergone a revolution since the introduction of aseptic and antiseptic methods. The operator of to-day unhesitatingly evacuates pus wherever it is found, be it in the liver, kidney, brain, or other organ. To wait for the possible absorption of an hepatic abscess is not prudent.

Shall we wait for spontaneous opening? Hepatic abscesses have occasionally discharged at convenient points, and recovery following. More frequently, left alone, they pointed in unfavorable localities and death closed the scene.

Hepatotomy, or direct incision through liver tissue after laparatomy, is the usual and most satisfactory course of procedure. By this method we are not groping in the dark, but can see what we are doing.

Omentum or coils of intestines that may lie between the abdominal walls and liver can be avoided. Divided blood-vessels can be secured, the abscess can be satisfactorily drained, and secondary abscesses searched for. While infection of the peritoneum can probably be averted, if unavoidable, the "toilet of the peritoneum" can be so thorough that no harm will likely result.

It is best to make our incision over the most prominent portion of the tumor. While the direction of the cut is not all-important, still, other things being equal, it had best be vertical. It should be long enough to admit of the proper manipulation of subjacent anomalies.

Should a perihepatitis have occasioned adhesions between the liver and parietes, our opening into the pus sac should be through the adhesions.

Our section of liver structure must be done with care. Having located the exact site of the pus by an exploring or aspirator needle, we can follow it down as a guide with a knife; having sufficiently enlarged the opening, the index finger can be inserted and the sac held up. A knife is now passed along the finger and the incision sufficiently enlarged. Peritoneal infection is prevented by close coaptation of liver and parietes, and the proper adjustment of sponges around the opening.

The pus pouch having been emptied, a careful digital examination should be made in search of secondary ab-

scesses. These may be emptied and drained through the primary sac. The entire length of the hepatic and abdominal wounds are accurately stitched together, and the wound closed, a large drainage-tube having been introduced.

It seems to me that the line of treatment that I have sketched in a very superficial manner, as I did not desire to tax your patience, is the most desirable, rational, and safe course to pursue. Other methods have been in vogue from time to time. They have all been successful. Most of them were suggested before Lister gave us antisepsis and while the peritoneum was practically a "sealed book," whose secrets could only be revealed under the penalty of almost certain death.

Aspiration can not thoroughly empty the cavity, and a secondary abscess may escape detection.

By the use of the trocar intervening intestine or omentum may be punctured.

Operation by two incisions at separate times has been advocated by Graves, Volkmann, and others. The first step is to cut down to or through the peritoneum and wait a sufficient length of time for adhesions to form between the liver and parietes; the secondary operation then consists of an incision through adhesion and liver tissue into the abscess.

This method takes days, and hours are often precious. It is intended to avert peritoneal infection, a misfortune by no means as serious as was formerly supposed, and one that can usually be averted by skillful manipulation.

Direct incision is indicated where pus has found its way into the subcutaneous tissues.

Other routes of attack have from time to time been resorted to, such as incision through the pleura. They are rarely practical, and I will not burden you with a description of them.

DYSENTERY: ITS ETIOLOGY, PATHOLOGY, AND TREATMENT.

By J. F. Purdom, M. D.
Louisville, Ky.

I shall not worry you with a history of dysentery, in any of its bearings, from the literature of the subject, but shall endeavor to state what I believe to be the principal features in the etiology and pathology of the disease, with the leading indications for a successful treatment.

Dysentery, either sporadic or epidemic, is due to the same prime etiological factor; chronic dysentery (if there be such a disease) could only be the result of an uncured acute attack.

The difference in sporadic and epidemic dysentery exists only in the environments of the patient.

We are fully persuaded that dysentery is produced in all cases by a specific micro-organism as its prime etiological factor, and that the micro-organism must be taken into the digestive tract with our food or drink, and is not received in any other way; also that the presence of the micro-organisms do not always produce the disease, because the conditions necessary are not present. Just what those conditions are that are necessary for the development of dysentery in the presence of the specific micro-organisms we do not believe have been determined; yet we are fully satisfied that any condition that produces a pathological state of the mucous membrane of the rectum and lower

portion of the large intestine with lowered vitality will predispose the individual to the disease; such as constipation or diarrhea, indiscretions in diet, sudden chilling of the surface after the body has been unduly heated by exercise, or exposure of the body during cool or damp nights after unusually hot days, and overcrowding are perhaps the principal predisposing causes which are avoidable. Predisposing causes which are unavoidable are atmospheric. Though we are unable to satisfactorily define those particular atmospheric conditions, yet they must exist to produce epidemic dysentery.

Dysentery is purely a local disease in so far as relates to the action of the specific cause, which attacks only the mucous and submucous membranes of the rectum and lower portion of the descending colon.

The micro-organisms find here, under proper conditions, a suitable soil for their reproduction and growth. The systemic symptoms are not due to the absorption of the micro-organisms into the circulation. The early systemic symptoms are reflex through the sympathetic nervous system, due to the action of the specific cause on the nerve periphery spread out in the mucous membranes involved, and to the absorption of the product which is a necessary result of the growth of the micro-organisms. Other things being equal, the nervous prostration will be in proportion to the amount of mucous membrane involved. As the case advances we have ulceration, due directly to the local action of the micro-organisms: from those ulcers we may have pus absorbed, and possibly produce the historic "hepatic abscess;" but more especially at this stage we may have a general septic condition, the symptoms assuming a typhoid character, which is entirely due to the absorption of septic material furnished by the local action of the specific cause.

We may have a still more serious condition arise in the latter stage of the disease, especially during some epidemics, though it may occur in sporadic dysentery. I refer to a stage of collapse, which in some instances foreshadows death in from twenty-four to seventy-two hours, a condition when once established we are powerless to relieve—this condition being produced in an exhausted patient by a large surface of the mucous membrane of the bowel becoming rapidly necrotic, with a corresponding absorption of the products of necrosis. Just here would very naturally arise the question, What has been the cause of such diversity of opinion with reference to the therapeutics of dysentery? That difference of opinion could only be the result of a misconception of the etiology and pathology of the disease. The fact that the natural tendency of dysentery is toward recovery, taken in conjunction with the nature of its pathology, enables us to understand why men would have apparently reasonable success with any form of treatment in which purgatives with an opiate was used. As before stated, the first systemic effect of the specific cause is by reflex through the sympathetic nervous system, suspending eliminative function; and it is the unloading of this pent-up secretion that has given to the much-vaunted ipecac its world-wide reputation as a specific in dysentery. The favorable action of ipecac does not exist in its specific properties, but in its ability in large doses to suspend absorption and exalt excretion. All the secretory functions of the body being abundantly acted on by a large dose of ipecac, nature's antiseptics are brought in contact with the specific cause of the disease as the secretions are discharged, while at the same time the free flow of mucus from the lower bowel, and the thorough emptying of the intestinal canal has much to do with getting rid of the micro-organisms.

From this standpoint we readily perceive why ipecac is efficacious only in large doses not frequently repeated; also why all the benefit to be derived from the drug is usually obtained by the first two or three doses, because small doses do not arrest absorption or produce sufficient excretion, and if large doses are repeated at short intervals or continued too long, the secretory functions being exhausted there is nothing to excrete, and absorption arrested, our patient failing to be nourished, he would necessarily become exhausted; hence, if not relieved by a few doses, the drug must at least be suspended to give time for the secretions to replenish themselves. For obvious reasons ipecac no longer holds the high place in the therapeutics of this disease it has previously occupied.

Dysentery being a local disease, and the specific cause occupying a field readily in reach of local remedies, the rational indications for treatment are irrigation of the bowel with hot water, followed immediately by an antiseptic solution; the irrigation and antiseptic to be repeated from two to six hours apart, as indicated by the improvement in the case; a cathartic being given to relieve suspended elimination at the beginning of treatment, and repeated if required, as indicated by the state of the secretions. In most cases the choice of cathartic is between the salines and castor oil. A single purgative dose of calomel followed by a saline is sometimes an excellent prescription when there is a heavily coated tongue.

The bichloride of mercury in solution of 1–5,000 holds first place in my estimation of drugs to be used as a local antiseptic following irrigation of the bowel with hot water. About six ounces of the bichloride solution should be injected in case of the adult, and not allowed to remain longer than ten minutes before it is expelled. The bichloride solution should perhaps not be used more frequently

than every six hours; however, if found necessary, the irrigation with hot water may be used, intermediately followed by a milder antiseptic, such as a solution of sulpho-carbolate of zinc or boracic acid. Those milder antiseptics would be preferable with infants and young children. The ability of sulpho-carbolate of zinc to deodorize the discharges speaks in its favor as an antiseptic in dysentery. In conjunction with the purgative and local antiseptics, an opiate becomes curative in its action by virtue of relief to pain and its tranquilizing effect on the nervous system, thereby placing the inflamed surfaces at rest. The opiate is best given by hypodermics of morphia and atropia, or by enemata of starch-water and laudanum.

In my opinion the injection of cold water in the bowel is never indicated, and in many cases it is absolutely harmful. The diet of the patient should be carefully regulated, according to the ability to digest food; but after the first forty-eight hours the patient should be as well nourished as possible.

The patient should be put immediately to bed on the advent of the first symptoms, and required to remain quiet until all irritation of the bowel is completely relieved.

I am fully persuaded that if the patient is seen early in the case, and is properly treated, with careful nursing in the absence of the doctor, there should not be any mortality from dysentery.

A CASE OF URINARY FISTULÆ, THE RESULT OF STRICTURE OF THE URETHRA.

By J. V. Prewitt, M. D.
West Point, Ky.

Urinary fistulæ are not of very rare occurrence, from the fact that the cause to which they owe their origin has not been properly dealt with at an early date, or the case is not seen until the fistulæ have already formed. Urinary fistulæ may communicate with the bladder or urethra, the latter the most commonly, and are found to be preceded by extravasation, abscess or rupture of the urethra, and are generally the direct consequence of some urethral obstruction. They also follow an accidental wound in the perineum or urethra or such operations as lithotomy. Fistulæ open most commonly in the perineum or through the scrotum. They may, however, discharge in various places, as in the thigh or over the pubes. A fistula of the latter place is always the result of extravasation and an incision at that particular point.

The case I desire to report illustrates those pathological conditions which are observed at a late date.

Case 1. J. W. B., aged fifty years, occupation a farmer, twenty years ago contracted gonorrhea, and was treated for the same by his family physician for something near six months. Thinking he was about cured, he discontinued treatment. A year later he noticed the stream to be somewhat diminished in size and twisting; had a desire to mic-

turate very often, but finally was compelled to go to bed, suffering with retention of urine. His family physician was called in, and recognized a strictured urethra, which he dilated, and the patient returned to work. Ten years ago his attention was called to a severe pain and a sense of weight and heat in the perineum, with chills and general febrile reaction, the stream being greatly diminished and pain greatly increased when he passed his urine. By this time he recognized that an abscess had formed in the perineum. It was opened, but this was shortly followed by the escape of urine through the opening at each micturition. About this time (ten years ago) he claimed that, while riding on a sulky plow, his scrotum was bruised and several little boils appeared over the scrotum. He had them opened, but it was shortly followed by urine passing out at the point where they had been opened. I was called to see him last February, and upon examination found him suffering with an old stricture in the membranous urethra and two in the anterior urethra, and the scrotum and perineum perforated by fistulæ in ten or twelve places. The odor in the room was very disagreeable, as he had had incontinence of urine for the past six or seven years, which occurs when the compressor urethra and muscular elements of the prostate are paralyzed, and is also present in a number of cases of prolonged overdistension of the bladder, the pressure from behind overcoming the normal resistance of the muscles. His condition was very alarming, owing to the fact that he was very much emaciated.

I operated March 16, 1892. The patient was placed in lithotomy position, Dr. J. Moore administering chloroform and Dr. Crutcher assisting. I did a perineal section, opening the urethra in the membranous portion, extending the incision to the apex of the prostate, at the same time parting the old stricture. The bladder was washed out with

a hot solution of boracic acid and dressed antiseptically. I ordered boracic acid to be given internally every four to six hours and milk diet for a few days. The two anterior strictures were of large caliber and were afterward treated by dilatation. And the fistulæ, not being sufficient to admit of a small probe, I introduced a hypodermic needle and injected carbolic acid in each fistula. He had fever for the first few days, but the temperature did not rise above 102° at any time. The patient has made a good recovery, having gained something near thirty-five pounds in weight since the operation.

When fistulæ are due to strictures the treatment should be directed to the strictures, and operative measures are seldom needed upon the fistulæ of the perineum or scrotum, from the fact that simple unindurated perineal or scrotal fistulæ will readily disappear when the stricture is properly dilated; but when there is much induration about the fistula I would insist that the latter be dissected out together with the pouch, which is usually found near the urethral surface.

METHYL-BLUE. SOME REMARKS CONCERNING A NEW REMEDY.

By W. F. Boggess, M. D.
Louisville, Ky.

It is with great reluctance that I come before you with what is generally considered a chimerical paper. No longer is it possible for a man to advance a chimerical theory of disease and not be silenced by the forcible arguments or deserved contempt of those competent to judge of its merits. Still, realizing that the treatment of diseased conditions is largely empirical and specifics distressingly few, I make no further apology for bringing before your attention one of our many new remedies, methyl-blue. The aniline dyes, innumerable in character, varied in effects, and proliferating so rapidly that it dazes one to contemplate their number, have never been until recently used as a therapeutic agent. Their function and use have heretofore been confined to the arts and in staining pathological tissues and bacillary growths.

A year or so ago some progressive Eastern surgeons and pathologists began the use of some of the aniline colors upon morbid growths. The pyoktanin, blue and yellow, and fuchsin were employed, both topically and as injections, into diseased tissue. Old chronic ulcers, rapidly proliferating epithelial growths, pus-secreting cavities, and other foul surfaces were found to do well under the proper use of pyoktanin. Our dye specialists, I believe, now use the yellow pyoktanin.

In the spring of 1891, while attending physician to the German Protestant Orphan Asylum, in which we have from ninety to one hundred and ten little ones, we had a siege of diphtheria which ran through the whole institution in spite of all the prophylactic measures we could adopt. Out of the first five cases, following the old line of treatment, we lost three cases. Yet, considering the virulence of the epidemic, I considered myself fortunate to save two. In desperation I began to search for something new. Knowing that the Krebs-Loefler bacillus was most readily stained by methyl-blue dye, and that it was both antiseptic and astringent, I determined to try it locally, which I did in the strength of one to eight. I found considerable relief given the patients. At this time I called Dr. J. B. Marvin in consultation, and he suggested that the drug be given internally, as it was non-toxic, save in large doses, and the toxic symptoms were then due to the arsenic and zinc which it contained as impurities. I began giving it in two-grain doses every two or three hours. What the action in diphtheria is I am unable to state, save in fifty-two consecutive cases treated in the asylums and in private practice I never lost a case. All these cases were beyond the possibility of mistaken diagnosis. After giving one single dose of the drug, in two hours the urine became very blue (showing rapid dissemination and elimination of the drug), and would remain so for five or six days afterward—specific gravity 1016–1021; no albumen, no casts, no epithelia, an increase in quantity of urine, without any evidence at all of kidney irritation.

Observing this action upon the kidneys, I resolved to try it as a diuretic in certain marked renal conditions. I was called in consultation to see O. H., a paralytic from myelitis of some seven years' standing. He was seemingly passing rapidly *in articulo mortis*—had been doctored for

some time for bladder trouble; was passing from eight to twelve ounces of urine, half of which was pus, per day. There was pain in lumbar region just before this minimum discharge of pus; a tumor at seat of pain; epithelium from pelvis of kidney and infundibula; blood globules; mucus; every indication of an extensive pyo-nephrosis, loss of appetite, and rapid emaciation. I immediately put this patient on two-grain doses of methyl-blue every three hours, and in a very short while marked improvement was noticed, until now, six months afterward, patient is passing three pints of urine, in which only at rare intervals can any pus be found. He has regained his appetite, has gained fifty pounds in flesh, and is in better health than for years. He continues to thank God, praise his doctor, and take methyl-blue.

I will not impose further upon your patience, gentlemen, than to say that methyl-blue has been used in other kidney cases, both acute and chronic, with excellent results, both by me and other physicians, which cases will be reported in time.

BURNS OF THE EYE.

By Dudley S. Reynolds, M. D.
Louisville, Ky.

Burns of the eye are entitled to especial consideration when they affect the conjunctiva or the cornea. They should be classified according to cause and extent. The ophthalmic surgeon seldom sees the patient whose eyes have been burned by caustic alkalies or acids in time to employ chemical antidotes, yet these are too often neglected by those who have the opportunity of seeing such cases at the moment of occurrence.

In order to draw practical conclusions it will be necessary to enter somewhat into the details of this part of the subject; and, if I inadvertently indulge in some adverse criticism of my peers who have written authoritatively upon this subject, I beg that my clinical observations be taken as a sufficient warrant for the personal conclusions to which I may invite your attention. Prof. Noyes (p. 266) directs attention to the especially destructive agency of the fulminate of mercury used in percussion caps, cartridges, torpedoes, etc., and which boys are prone to use somewhat recklessly. The great extent to which burns from this source usually penetrate the tissues may be accounted for both by the intense explosive force with which the heated particles are driven into the eyes and the very fine amorphous division of these particles. A deep slough almost invariably follows burns of this kind, and the treatment of

the eyes so injured must be conducted with reference to this fact, because a slough of any extent leaves a raw surface, which by contact with the opposed mucous membrane will in time become adherent. The particles of the fulminate may be accompanied by insoluble matter, and thus produce permanent stains in the cornea.

Quicklime frequently flies into the eyes of plasterers and others engaged in handling it. Its destructive effect is very rapid, and may be partially counteracted by the instantaneous use of vinegar, which converts a portion of the lime into the comparatively harmless acetate; the remaining portion should be removed by instrumental means.

Ammonium, in the form of the caustic liquor, or the carbonate, produces very painful caustic effects when spattered into the eyes, and may be quickly neutralized by a few drops of vinegar, or any mild acid, such as lemon juice.

Nitrate of silver is a dangerous caustic, yet it is almost in constant use by thoughtless surgeons, who imagine the destruction of the surface of the inflamed mucous membrane in some mysterious way arrests the inflammation. Knowing full well the destructive action of this potent agent, the surgeon who employs it usually provides himself with a saturated solution of chloride of sodium, and on applying the silver he washes off the excess from the surface of the membrane. The coagulum, characterized by the appearance of a white film, is quickly brushed over by a little of the solution of the chloride of sodium, which precipitates the insoluble chloride of silver, leaving a thin eschar to separate by the ordinary process of sloughing. This is no less a burn than that following any other agent producing destruction to the same degree and extent. This process being repeated involves of course the development

of a constantly increasing amount of cicatricial tissue, proportioned to the depth and the extent of the cauterization.

Sulphate of copper, for nearly half a century in almost constant use, has, like the nitrate of silver, done incalculable damage to the human family as a caustic. The depth and extent of its action is much less than that of the silver; but it does unmistakably provoke parenchymatous inflammation when frequently applied to the conjunctiva. It produces likewise such destruction of the corneal epithelium as to create an opaque film which permanently impairs the acuity vision.

Dr. O'Halleron, in the first chapter of his "Remarks on Acute and Chronic Ophthalmia and on Remittent Fever," published in London, 1824, speaks of bluestone being used with great efficacy and safety in the treatment of inflammation of the conjunctiva, and states that he had treated hundreds of cases of chronic corneal and conjunctival diseases by the direct application of bluestone to the inflamed membrane. Although it had been used before, yet these remarks from an eminent army surgeon led the profession to an indiscriminate use of it as a caustic, which I regret to say has not even yet been abandoned.

Caustic potassium, in the form of concentrated lye, is frequently introduced into the eyes. It is instantaneously destructive, and should be treated at the instant of occurrence by free ablutions of vinegar, followed by a weak lotion of chloride of sodium, to be more particularly explained presently.

Mr. James Dixon, of London, in the third edition of "A Treatise on Diseases of the Eye," 1866, and in the section on ophthalmic surgery in Holmes' System of Surgery, 1881, strongly recommends the use of liquor potassium for the destruction of hypertrophied papillæ. He says: "The fluid is dabbed upon the everted lids so as to be fully

brought into contact with the whole surface, and it appears to act by saponifying and dissolving away the hypertrophied tissue."

He says it should be used every few days for a period of about six weeks. This explanation by Dr. Dixon of what he supposes to be the therapeutical action of caustic, shows exactly how all alkaline caustics act in destroying the conjunctival membrane and the cornea.

Fused metals are perhaps, of all other causes of accidental burns, the most dangerous and frequently encountered. The momentary treatment should, of course, consist in the removal of the particles of the metal.

Burns by steam and boiling fluids have no chemical antidotes, and require, therefore, no chemical treatment at the instant of occurrence.

Now, in general terms, permit me to say the results of all these and similar injuries are modified more or less by early treatment. Those which occur in the hands of the surgeon, as nitrate of silver and sulphate of copper, are happily becoming less frequent. Less than a month ago, however, I was consulted by a brother practitioner in this city in regard to an old gentleman, seventy years of age, who had chronic blepharitis, and who had been subjected for a long time to the almost daily application of sulphate of copper in the hands of a physician. The retrotarsal conjunctiva had become a swollen mass of callous tissue. The corneal epithelium had been destroyed, and with it the underlying anterior elastic layer, throughout the extent of the whole surface in both eyes. Having become discouraged, he remained at home for a few days, when the pain becoming so intense he was obliged to summon other medical counsel. The physician called sought my aid in consultation. The treatment suggested consisted in the use of one grain of bichloride of mercury and half an ounce

of chloride of sodium to a quart of distilled water, to be used every hour to keep the eyes cleansed from accumulating excretory matter. To relieve tension, one grain of sulphate eserine, dissolved in one ounce of distilled water, was directed to be instilled into each eye every four hours. The patient being of the rheumatic diathesis, salicylate of sodium, ten grains in a goblet of water every four hours, was employed. He has made slow but steady recovery; and whereas he was unable to count his fingers when I first saw him, he now goes out alone. The amount of corneal opacity, however, is such that he will not likely be able to see to read again. I will not burden you with a citation of cases of destructive cauterization by sulphate of copper and nitrate of silver, but they are, I assure you, sufficiently numerous to invite most earnest inquiry into this terrible and misguided method of treatment. Now, one of the main features I had in view concerns the treatment of every class of burns of the conjunctiva and the cornea, which are sufficiently intense to cause abrasions of the surface. In no case should the eye be closed, where it is possible to keep it open. The use of oils, and especially castor oil, so much in favor in the profession, produces in all cases an increase of irritation. Whenever any mucous membrane is wounded, and it becomes necessary to make local applications to it, the chemical composition of the fluids covering that membrane in its normal condition should be considered in devising the plan of local treatment. Now, as is well known, the conjunctiva in its normal state is constantly bathed in a fluid rich in the chloride of sodium, and so this salt should enter into nearly all local applications designed to remove offending matter. The reason no kind of bandage should be employed is obvious, as its use must necessarily favor the occurrence of attachments between the lids and ball. A case in point is that

of Mrs. M., of New Albany, who in some manner got a quantity of boiling water in the left eye. She was opening a can of concentrated lye at the time, and placing her finger in the lye instantly put this finger into the eye in such a way as to leave large quantities of the crystals lodged between the the lower lid and the surface of the ball. A druggist next door used ablutions of vinegar, washing away the excess of potassium, and thus limiting the extent of the burn. The family physician arriving used castor oil, as recommended in the books, and applied the cotton compress. The pain was most excruciating, and he gave hypodermic morphine. After twenty-four hours of this kind of treatment I was called. I removed the dressings, washed the eye with a solution as follows:

℞ Borate of sodium, ... ʒijss;
Chloride of sodium, ... ʒss;
Distilled water, ... ℥xij;
Camphor water, ... ℥iv.

This application relieved the pain almost instantly, and by renewing it every hour the patient was comparatively comfortable. The next day she was able to visit me at my office. The slough involved a large extent of the lower portion of the cornea, perforating at the inferior margin. Before the period of perforation I directed a solution of eserine, one grain to the ounce of water, dropped into the eye every four hours. Keeping the pupil contracted prevented the iris flowing into the open wound of the cornea. When the perforation took place the eye was closed with a little cotton wool and a piece of plaster, just enough cotton being used to keep the plaster from adhering to the eyelash. In about forty-eight hours the dressing was removed, and the corneal wound found closed; adhesions had taken place between the lower lid and the surface of the ball.

Passing a probe under the adhering portion, separation was produced, and a little ointment of yellow oxide of mercury placed between the lid and ball, smoked glasses being used, and the eye left open.

In this manner the treatment was carried on until complete cicatrization resulted. Where burns are so extensive as to make it impossible to prevent adhesions between the lid and ball, those may be greatly modified by leaving the eye open and daily separating the opposed abraded structures with a probe anointed with a little yellow oxide of mercury ointment.

I will not tire your patience with a further recital of cases, but wish to remark, in conclusion, that no injury to the eye in the nature of a burn should ever be treated by a bandage and compress; yet this plan is recommended by Nettleship, Juler, Carter, Meyer, McNamara, and I believe nearly every writer on ophthalmic surgery.

THE PRESENT STATUS OF BONE SURGERY.

By R. C. McChord, M.D.
Lebanon, Ky.

In presenting for your consideration the present status of the surgery of bones, it is not my purpose in the brief time allotted me to attempt to discuss this subject in its entirety, but rather to call your attention briefly to what I conceive to be some of the most recent advances made in this line of surgical work. In viewing medical literature during the last several years I am surprised how little attention has been given to this very important branch of surgical art, while at the same time hundreds of victims in the hands of general practitioners and surgeons are yearly dying or eking out a mere existence with suppuration and decay, which could otherwise be remedied by prompt surgical interference.

The recent study of the cause of idiopathic suppuration, whether it be in bone or other structures of the body, and its known bacterial origin has done much to advance the treatment of phlegmon.

Acute infectious osteomyelitis, or suppuration of the medullary substance of bones, presents one of its most dangerous and destructive forms, and if we are to accept the more recent pathological conclusions as to its cause, we must believe it to be due to the establishment of cultures of the gold-colored grape coccus in the capillaries or arterioles of the marrow.

As to the manner in which this infection occurs, it is still a matter of controversy, though it is known to be most common during adolescence, and traumatisms are common provokable causes.

The insidiousness of the local and the gravity of the general symptoms frequently lead to errors of diagnosis, and so it is that typhoid fever, meningitis and acute articular rheumatism are frequently diagnosticated and the affection remains unrecognized until a fluctuating swelling dispels the error.

White-swelling, or so-called scrofula of bone, since the discovery by Koch of the bacillus of tuberculosis, has been demonstrated to be due to a tubercular deposit in the bone, aided in the great majority of instances, no doubt, by an initial lesion, at the period of life when the bones are in their greatest nutritive activity. Hence it is that the large majority of cases of tubercular ostitis is to be found in the youth forming the so-called scrofulous dyscrasia, or, in other words, those having a deposit of the tubercle bacillus in some other portion of the body before the solution of continuity took place in the bone.

Those who have seen much of the diseases of bones must certainly have arrived at the conclusion that medical or expectant treatment *per se* is a failure, and to surgery we must look for results. The sunken eye, the pallid and hectic cheek, the emaciated body, racked with pain and anguish, burned up with septic fever, and the anxious worn-out mother's wail are too oft-told tales in our experience. That such cases are remediable by prompt and active surgical treatment can not be denied. And just here I desire to enter an earnest plea against the very common expectant plan of treatment often pursued.

The use of Esmarch's bandage, the catgut ligature, and antiseptics have opened a wide field for practice in these

cases, and it is surprising to me that the advanced knowledge of the surgical treatment of diseased bone is not more fully put in practice. Since the introduction of Esmarch's bandage extensive necrotomies have been deprived of their chief danger, namely, hemorrhage, and the surgeon enabled to see each step in his operation, incurring a more thorough and painstaking procedure, thus rendering it possible for all diseased structures to be removed. Even with the removal of these two great elements, a long course of suppuration characterized the healing of these cases, until the use of antiseptics enabled Neuber to demonstrate the possibility of healing necrotomy wounds by first intention, by the process of implanting the skin flaps in the bottom of the wound.

Scarcely had Neuber's method been known when Shede successfully proved that a more perfect means to the end in view could be attained by the formation and maintenance of a moist blood clot in the wound.

Shede's method has the advantage over Neuber's in that it can be employed successfully under the most varying conditions, especially when the absence of a sufficient covering of the skin can not be obtained. By Shede's method it is possible that the worst destruction of bone, whether of recent injury or necrotomy, can be reproduced and the symmetry of the bone and limb preserved without suppuration.

According to Gerster, the indispensable conditions for a successful employment of Shede's method are laid down in the following propositions:

First: "Thorough exposure of the seat of disease by incision and by the use of mallet and chisel."

Second: "Complete removal of the whole sequestrum or all the sequestra, and of the entire pyogenic membrane lining the cavities and sinuses, by scooping and scraping with the sharp spoon."

Thirdly: "Thorough disinfection of all the nooks and corners of the wound by a vigorous use of the irrigator and corrosive-sublimate lotion, and wiping it out with a clean sponge. The final flushing and mopping out should always be done with the strongest solution of corrosive sublimate used by surgeons, viz., 1–500, residua of the strong solution, to prevent mercurial poisoning."

Fourthly: "The formation of a blood clot which should fill the wound to the level of the skin, and its preservation from putrefaction and exsiccation by a suitable antiseptic dressing."

The following is the mode of procedure in applying an antiseptic dressing to get the benefit of Shede's method after necrotomy or recent destruction of bone:

The edges of the wound in the soft parts are brought together so far as practicable by catgut sutures. A piece of rubber tissue, rendered antiseptic by previous immersion in carb. acid solution, is applied so as to cover and just overlap the edges of the wound. A layer of several thicknesses of iodoform gauze is then applied, and over this a covering of corrosive-sublimate gauze, all held in place by a roller bandage tight enough to make good pressure.

The limb should then be elevated, Esmarch's constrictor removed cautiously, and the limb still kept elevated for several hours until a firm blood clot is formed in the wound.

The success attending the use of this method during the last few years has been truly marvelous.

Bones diseased in their entirety have been removed, and by a careful preservation of their periosteum and the organized blood clot they have been reproduced without suppuration. In the future I believe its application will be more extensive, not only where bone surfaces are destroyed, but soft tissues as well; and when it is well

understood we will have very little use for decalcified chip.

In offering a brief summary of the present status of bone, I would say that an early diagnosis and a free incision down to and into the bone is demanded where the inflammatory symptoms are severe, as determined by pains, swelling, high fever, or pus is determined by an exploring needle.

It is better to err on the safe side and make the incision, even if a diagnosis is not positively made, and thus prevent extensive necrosis, septic absorption, etc., by free irrigation and drainage.

If necrosis or caries is evident, a free incision should be made down to the bone, and all dead and diseased structure freely and systematically removed. If not certain that the cavity is aseptic, and therefore Shede's method not admissible, pack it with iodoform gauze and over this a thick moist antiseptic dressing.

Should the first operation not prove entirely successful, prompt revision should be done.

By an active and fearless application of these means we can hope to arrest the "*green monster*," a living death, and the loss of many, many limbs condemned to the amputating knife.

DOUBLE SYNCHRONOUS AMPUTATION.

By R. Craig Falconer, A. M., M. D.
Lexington, Ky.

In amputations as well as in other operations not alone are the progress and achievements of surgery demonstrated, but also the results and advantages of modern research, discovery, and appliances. Comparing the surgery of to-day with that of even twenty-five years ago, we realize how many vicissitudes and radical changes it has undergone; and these are more marked in the manner of treating stumps than in the technique of the operation. Three of the most prominent factors concerned in promoting the chirurgical art to its present degree of perfection are improved hemostatics, antisepsis, and drainage, since the control of hemorrhage, prevention of germs, and thorough evacuation of the morbid material are important and indispensable to successful amputations and other surgical procedures. We certainly have facilities for checking hemorrhage that our predecessors did not enjoy, nor did they pay much if any attention to antisepsis, although the law of absolute cleanliness has always existed. With some the drainage-tube is of doubtful utility, and there are unquestionably cases which seem to do just as well and perhaps better without it, while others demand free drainage which only the tube can satisfactorily furnish. In former years, the bleeding vessels being ligated with silk, and the flaps approximated with the same material, adhesive strips were

interposed between the sutures and extended over the face of the stump to dam up the pus and keep it in. The stump was then enveloped in a piece of rag besmeared with grease, and finally wrapped in a towel which served to hold in nature's revengeful spit. Thus the stump was allowed to be constantly bathed in its own reinfecting pus, the consequences being pyemia, sloughing, and pus sinuses. Of course union by first intention was always impossible under such circumstances. It would not be fair to say that all cases so treated fare ill, though it is but reasonable in the light of experience to believe that many cases would have progressed better, and those that failed might have done well, had they been differently managed. Both triumphs and diminished mortality bear testimony to the wisdom and efficacy of such treatment as is now applied to stumps. A double synchronous amputation for disease, other things being equal, is not so serious as for grave injuries with shock and exhaustion; but in either case, inasmuch as it is imperatively necessary that the duration of shock and anesthesia be diminished as much as possible, it is a good and safe plan to have two surgeons actively engaged in the operation, so that while one stump is being finished the other may be begun. Since sawing the bone seemingly increases the shock, and therefore jeopardizes the patient, it is the part of wisdom to avoid sawing the bones exactly simultaneously, and give the system a chance to recover, at least in a measure, from the shock incident to the sawing of one member before the other is sawed. In dressing stumps after double amputation I have always found it necessary to use splints, as the stumps are apt to assume a position at right angles with the body, causing tension of the muscles and retraction of flaps. In double amputations we ought to strictly observe the time-honored rule of saving as much healthy tissue as possible.

Whatever consideration the prosthetical question merits in other less grave amputations, it is entitled to little or none in such synchronous amputations as I shall report, since the life of the patient is so seriously involved in these operations, and we are not justified in such a procrustean imitation as adapting living tissue to artificial limbs at the risk of human life.

CASE 1. Carey C., colored, aged fourteen, was brought to St. Joseph's Hospital, May 5, 1891, with the following history: He was a healthy, robust boy until October 4, 1890, when he was taken sick with pneumonia, kidney trouble supervening, illness lasting about two months. Three weeks after convalescence his feet and legs began to swell, and were, the boy's father states, picked with needles to allow the fluid to escape. But they continued to go from bad to worse till they became enormously swollen and "shone like glass." His feet and legs were next bathed in some domestic lotion—I believe made of mullein weeds—and, according to his father's statement, the swelling subsided and the feet and legs turned black; then a sore developed on the right knee-cap, subsequently another on the inner aspect of right knee-joint. When I saw the boy for the first time, in the afternoon of the aforesaid day, his feet and legs were extensively gangrenous and infested with swarms of larvæ. His left leg, from the sole of the foot nearly to the upper third of the thigh, looked as though it had been charred, while his right leg was in a somewhat similar condition and almost disarticulated at the knee and ankle-joints, the tibia and fibula being bared for half their lengths. He was emaciated to a marked degree, and still had a cough. Kindly assisted by Drs. W. A. Brock, D. H. Kellar, Milton Edmonson, and T. A. Jones, I amputated both thighs, the left one at the upper third and the right one at about the junction of the middle and upper thirds.

As soon as I had transfixed one thigh, arrested hemorrhage, secured flaps, and inserted drainage-tube, Dr. Kellar did the suturing, while I proceeded to amputate in like manner the other thigh. The operation, which lasted about three quarters of an hour, being finished, and the stumps dressed with iodoform, sublimated gauze, and cotton, I gave the patient a hypodermic of whisky, had him wrapped in blankets and placed in bed surrounded by hot bottles. Ether was the anesthetic used, as we found that the patient could not bear chloroform. He reacted from the etherization in due time, and was bright and cheerful. In the evening, about three hours after the operation, his pulse was 120, temperature 101° F.; there was slight oozing of blood from the right stump. On the following morning his pulse was 130, temperature 103.4° F. The dressings were removed and the stumps irrigated with carbolized water. His pulse from the day of the operation to about twelve days afterward varied from 120 to 140, and his temperature from 101° to 105° F. The pus was not as abundant as we might expect to find it in such a case where the tissues were so diseased. Drainage continued good, and the tubes were removed about the twelfth day after the operation. While there were both retraction and sloughing in each stump to the extent of exposure of the bones, this process progressed to a greater degree in the left stump than in the right one. To-day both stumps are entirely covered by sound and healthy tissue, and the boy is perfectly well, going to school every day, and weighs much more than he did just before the operation, if not more than ever. At present he has no albuminuria. As a tonic I gave him syrup of albuminate of iron and quinine.

CASE 2. Robert T., a colored boy, about fifteen years old, has rather an unusual history. He states that in the afternoon of November 17, 1891, after his work in the

country was done, he was going through a cornfield on his way to town. Tired, sleepy, and overcome by the cold, he lay down on a heap of cornshucks and slept there until the following morning, when he awoke feeling cold and numb. Unable to proceed on his journey, he relapsed into sleep, and claims to have remained in that condition for two or three days. Finally a party of boys found him lying in the field, and on November 20, 1891, he was brought to St. Joseph's Hospital. On looking at the boy it was at once evident that he had been severely frost-bitten. Both feet and legs were swollen and as cold as ice; in other words, "frozen to death." They were also tender and painful, a burning sensation being felt, especially at the junction of the sound and diseased tissues. There was more or less delirium till the gangrenous process was well established. His temperature ranged from 101° to 105°. Pulse regular but feeble. The immediate treatment consisted of stimulants and tr. chloride of iron internally, cold applications, and afterward hot antiseptic poultices applied to extremities. In the course of a week or so the line of demarkation was distinctly but irregularly formed about the middle of each leg. Drs. H. M. Skillman, M. T. Scott, J. H. Moore, and J. C. Carrick with me, both legs were bathed antiseptically and under chloroform amputated at the upper third. Drainage-tubes being inserted, the stumps were dressed with iodoform, sublimated gauze, and cotton, and then placed in light splints. After considerable suppuration and some sloughing, the stumps healed, and the patient has since made an uneventful recovery.

THE ETIOLOGY OF ATROPHIC RHINITIS.

By W. B. McClure, M.D.
Lexington, Ky.

Chronic hypertrophy of the nasal mucous membrane may ultimately result in atrophy of that membrane. The author of this paper has for several years searched medical literature, histological as well as common, in vain for a lucid explanation of just how this wonderful transformation takes place; and we modestly present the following explanation, which we believe to be not only logical but a true statement of histological facts. The nasal mucous membrane, like that of the larynx and trachea, is covered with stratified, columnar, ciliated epithelium. It also contains a large number of mucous secreting cells. Below the epithelium is a thick hyaline basement membrane, and underneath this a mucosa of fibrous tissue with numerous lymph corpuscles. In many places this infiltration with lymph corpuscles amounts to diffuse adenoid tissue. The chief characteristic of the mucosa is that it contains a rich plexus of venous vessels. In the deeper structure are imbedded small glands, the ducts of which open on the free surface of the mucous membrane. So much for the anatomy of the parts.

We will next attempt an explanation of the pathological conditions which are present in inflammation of the nasal mucous membrane.

First: There is a dilatation of the arteries themselves,

which in a very short time is followed by dilatation of the veins together with migration of white blood corpuscles. This hyperemic condition at first produces hyper-nutrition of the turbinated mucous membranes. This condition, however, is of short duration, for the reason that by continuous dilatation the tonicity of the muscular coatings of the blood-vessels are at first weakened, and finally destroyed, leaving the blood almost stagnant within this hypertrophied tissue. The longer this turgid condition of the blood-vessels continues the more tortuous do they become, and this condition only adds another impediment to the already obstructed return of blood from the congested tissue. With the above existing pathological conditions we can readily understand the impossibility of a natural and free circulation of blood being carried on through these dilated, elongated, and tortuous vessels, deprived as they are of contractile force. As a result of the above condition, the current of blood is absolutely shortened and does not flow beyond the constricted portion of the arteries, which constriction is caused by a retraction of the diseased connective tissue beyond.

At this particular point the hypertrophy has reached its acme, and the stage of atrophy slowly begins to ensue. The first step in this direction is desquamation of the epithelial cells from the surface of the nasal mucous membrane. This exfoliation probably begins on the most prominent surface, which is that portion covering the turbinated bones; and this desquamative process is the direct result of malnutrition of the surface, and as this anemic condition continues the desquamative process advances till the mucosa proper is reached. At this stage of the disease, instead of there being a slow desquamation of individual epithelial cells, crusts begin to form on the surface of the membrane, and it is from the decomposition of these crusts that we get the disagreeably fetid odor.

As stated in the beginning of this paper, the nasal mucous membrane is studded with mucous glands which pour their secretion on to the surface of the membrane. The importance of these glands may in a measure be appreciated when it is understood that they secrete and pour on to the surface of the nasal mucous membrane about sixteen ounces of fluid during every twenty-four hours. In the process of desquamation and crust formation these mucous glands are next in turn attacked by this destructive process in its onward march, and the secretion of mucus begins to diminish in quantity. When this stage of the disease is reached it may be likened to the withdrawal of a stream of water from the consuming flames; the destruction becomes more and more rapid as the amount of lubricating and moistening fluid diminishes in quantity. When this stage is reached the little fluid secreted and poured out at once becomes dry, and in the form of inspissated mucus forms on the surface in large scabs or crusts, and these crusts in turn, by their hardened and dried surfaces, become as a foreign body within the nostrils, and do an untold amount of damage by contact with surrounding parts, often extending across the lumen of the nostrils, and by impinging on the opposite surface set up a new inflammation on the septum.

The disease has now gone so far as to reach the small blood-vessels within the deeper structure, and as a result of the flaking off of the dried crusts from the surface we get bleeding. As is known, the periosteum of the turbinated bones is simply the deep layer of the mucous membrane, and by reason of the cutting off the blood supply of this deeper layer we have atrophy not only of the periosteum but of the turbinated bones themselves.

In proof of my theory that atrophy of the nasal tissue is due primarily to hypertrophy and hyperemia of the

mucous membrane, I will mention the fact that the membrane covering the superior turbinated bone, which, compared with the mucous membrane lining the lower part of the nostril, is only slightly vascular and rarely ever becomes atrophied. In my judgment the cause of this difference of susceptibility of the very same membrane in different parts of the same nostril can only be accounted for by reason of the fact that the one is richly supplied with tortuous blood-vessels which favor hypertrophy, and the other is very scantily supplied with blood-vessels, and is therefore less liable to congestion with its consequent result of atrophy of that membrane. I have often seen in the very worst cases of nasal atrophy the integrity of the mucous membrane covering the superior turbinated bones still preserved, and the power of smell only slightly impaired, showing that stages of congestion and hypertrophy have not taken place in that portion of the mucous lining, which lack of congestion can only be accounted for by reason of the absence of the vascular tissue so characteristic of the membrane lining the lower portion of the nostrils.

The foregoing, in my opinion, completes a description of the etiology of atrophic rhinitis as it actually occurs. And now, in conclusion, I will recapitulate, in order to make clear the points which I have attempted to bring out in this argument.

1. Atrophic rhinitis is the ultimate and logical result of neglected hypertrophy of the nasal mucous membrane, and never occurs as a primary disease.

2. Its chief cause is from lack of nutrition caused by cutting off its blood supply.

3. The atrophic process is by desquamative inflammation.

4. The chief point to which I desire to call attention is

the apparent paradoxical statement that the beginning of atrophy of the nasal mucous membrane is due to anemia superinduced by hyperemia of the membrane.

If I have failed to make these points clear in my argument, it is because of an inability to express in language facts as they have appeared to me in a careful investigation of the etiology of atrophic rhinitis.

SURGICAL TREATMENT OF GENERAL SEPTIC PERITONITIS.

By J. C. Carrick, M. D.
Lexington, Ky.

The subject of the treatment of general septic peritonitis is full of interest to every surgeon, for prompt decision and action determine the fate of the patient.

There is no reason why pus within the abdomen should not be let out, as well as pus within the pleural sac or within any other serous cavity; under such conditions the cavity is converted into a large abscess, and it should be drained; nor does it make any difference what the origin of this pus may be. The pus, if present, must be evacuated before recovery can take place.

One thing which stands in the way of the general adoption of the operation is the traditional fear of the peritoneum. If there is inflammation with pus formation, what worse can happen, what harm can the opening of the cavity do? Such incision made with care is in itself absolutely without danger, as has been proven.

In proof of the above statement I would call your attention to a most interesting case.

I was called on the 20th of August to see P. H., aged fourteen years; occupation, jockey. I learned from his father that two months from the time I first saw him he was sick about five days, and that he was confined to his bed half the time. He complained of his stomach; it was

very much distended, but after the fourth day the distension gradually decreased, and the boy resumed his usual occupation as a jockey, and he enjoyed good health until the 20th of August, at which time I was first called to see him. I found his breathing very difficult and his abdomen very much distended. I then proceeded to further examination of the patient by first taking the temperature, which was found to be subnormal, pulse 140, respiration 32, tongue heavily coated, and the entire body bathed in cold, clammy perspiration. I decided at once to aspirate, which I did several times, and each time removing about a quart and a half of fetid pus, at the same time giving my patient whisky and milk, carbonate of ammonia, and tr. digitalis. The patient gradually improved under this treatment until about the seventh day, and then it seemed he was going into collapse, and the abdomen again began to be very much distended. The case being of such a nature, I was desirous of the counsel of my friend Dr. Moore, and upon his arrival gave the patient a very critical examination. He gave it as his opinion that the patient had but a short while to live, which opinion was thoroughly in accordance with my own. After communicating to the father and mother our views, they then inquired if there was nothing further to be done. I replied by saying that the only alternative left was to open the abdomen and wash it out. They at once expressed their willingness to permit the operation.

In spite of the unfavorable condition I had the patient sent to the hospital, where I at once made ready for the operation.

The operation was performed by the writer, with the assistance of Drs. Moore and Hawkins, on the morning of September 8th, at 10 o'clock A. M. An incision was made in the linea alba, about four and a half to six inches long,

midway between the umbilicus and pubes, and the dissection continued carefully down to the peritoneum. Upon opening the latter there was a gush of fetid pus to the amount of three and a half quarts or more. It was at once evident that I was dealing with a suppurative peritonitis. Large portions of the omentum had sloughed off, and the intestines were everywhere matted together, which had to be separated with my fingers. When the pus had all drained out the abdominal cavity was thoroughly irrigated with a warm solution of bichloride of mercury, 1–20,000 in strength, and then with distilled warm water kept up until it came away clear and free from any tinge or color. A large glass tube was inserted and carried to the lower portion of the pelvic cavity, and eight large sutures were then passed, and the wound was dressed with iodoform, carbolized gauze, oiled silk, and absorbent cotton. The time for the operation occupied about thirty-five minutes. Pulse at this time began to weaken. Hypodermic injections of whisky were freely used, which soon caused the patient to rally, and at 2 P. M. reaction was freely established.

Before the operation, 9:30 A. M., the patient's temperature was subnormal, pulse 140; next day, at 4 P. M., temperature 100° F., pulse 120; on fourth day, temperature 102° F., pulse 135. Dressing was removed and wound irrigated with solution of boracic acid; nourishment was taken freely every fonr hours. Next day, at 5 P. M., temperature 99° F., pulse 108. Up to this time very little morphine had been given. Bowels were evacuated without medicine; patient comfortable and cheerful, and the wound dressed every day.

On the eighth day there was a sudden rise of temperature. The tube was removed and the abdominal cavity was again carefully irrigated with a weak solution of boracic

acid; but on examination of patient's lungs there was evidence of pneumonia setting up in the left lung, which was evidently of septic nature. The usual treatment for this complication was carried out. Up to this time the patient was doing well, but on the tenth day he began to grow very weak, and died on the fourteenth day after the operation.

I believe, if I had operated sooner, I would have saved my patient's life.

EXTERNAL URETHROTOMY WITHOUT A GUIDE.

By J. C. Carrick, M. D.
Lexington, Ky.

Patient is twenty-seven years old, and is a clerk by occupation; his general health has been good up to three years ago; he has had gonorrhea a number of times, between the ages of sixteen and twenty-one. In the fall of 1889 he noticed that on urinating his stream was getting much smaller. On February 8th, on getting up to evacuate his bladder, he was taken with a sudden chill and found it was impossible for him to urinate; there was a good deal of vesical tenesmus, which came on about every ten minutes. I was called to see him hurriedly the same morning about twelve o'clock. I found him in great pain, the penis and scrotum extravasated with urine and swollen to an enormous extent. On thorough examination of his urethra I found that he had a stricture posterior to the bulbo-membranous junction impermeable to the smallest filiform bougie. On taking his temperature I found it to be 103°, and pulse 120. The operation I performed was a perineal section or external urethrotomy, assisted by Drs. Moore and Roberts. The patient was placed in the lithotomy position, the parts cleansed and shaved. I proceeded first by making a long incision along the lower portion of the penis, and also splitting the scrotum into two lateral halves, which was to relieve the extravasated condition.

I then began my perineal section in the median line, the incision being about two and a half inches long. I carefully dissected layer after layer until the urethra had been opened into upon a blunt sound previously introduced up to the front face of the stricture, having cut through the strictured part; the urethra was sufficiently incised to permit the introduction of a large sound; the stricture in the anterior portion of the urethra was divided by the Otis urethrotome; the urethra now being enlarged throughout to a uniform size, a rubber catheter, size 35, was then passed through the perineal wound into the badder, and that viscus as well as the urethra was irrigated with a solution of boracic acid; iodoform gauze was packed loosely in the wound; the tube was removed on the fifth day.

After-treatment consisted in passing a large steel sound, size 15, English, every day for two weeks, and after the second week the sound was passed twice a week. In the course of ten days the urine passed by the natural channel. The patient was put on tonic treatment and supporting diet. The wound healed rapidly. In five weeks the patient made an excellent recovery, and is at present at work and in good health.

SUPERNUMERARY BREASTS IN THE FEMALE.

By W. E. Sleet, M. D.
Midway, Ky.

I was called, October 11, 1891, to see Mrs. R., aged thirty-seven years. Found her in second stage of labor, this being her eighth child. While preparing for examination she asked her nurse to dampen some flannel cloths with spirits of camphor. When asked for what purpose the wet cloths were wanted, she replied that she wished to dry up her breasts. After being told that she should nurse the child, she answered by saying that she was unlike other women in that she had four breasts, and thought that two would be sufficient upon which to rear the child. An examination proved that she had four well-developed breasts, one in either axilla besides the two normal breasts on the chest; the breasts in the axilla being well developed and about the size of a goose-egg, the nipples being about the size of those of a cat. From the axillary breasts a semi-transparent milky fluid flowed freely. The breasts were developed during the gestation of the fifth child. When first noticed they were indurated and about the size of a small marble. Some weeks before the birth of the child they became much enlarged and softened, and exuded a milky fluid much to the discomfort of patient, who also suffered some inconvenience for some weeks before and after the birth on account of having to carry the arms extended nearly at right angles with the body. After the

birth of fifth, sixth, and seventh children patient had subdued flow of fluid by local applications. Patient gave history of an aunt, who during the gestation of third child developed a sinus in the flexor side of left wrist, from which there flowed a milky fluid during each term of gestation and lactation thereafter—she being the mother of seven children.

Certain rare examples are on record of certain anomalies in the number and location of the mammary glands. In some instances three, four, and five distinct glands have existed instead of two. Some remarkable cases of malposition of the glands have also been reported. Dr. Robert, of Marseilles, in Magendie's Journal of Physiology, reported a case where there was a well-formed mammary gland on the external surface of the left thigh, about four inches below the great trochanter. The mammary glands upon the chest functioned with regularity and were normal in all respects, but the gland upon the thigh secreted during lactation such a quantity of milk that the woman had nourished all of her children, seven in number, indifferently from the three glands. He also reported that the mother of this woman had three mammary glands, one on the left side of chest and two on the right.

In the case of Mrs. R. there is no malposition of the glands, they being only developed from the lymphatic glands of the axillæ. Remembering the anatomy of the axilla, we find that it usually contains ten or twelve large sized glands. A chain of these glands surrounds the axillary vessels, imbedded in a quantity of loose areolar tissue. These receive the lymphatic vessels of the arm. Other glands are dispersed in the areolar tissue. The remaining glands are arranged into two series: a small chain running along the lower border of the pectoralis major as far as the mammary gland, receiving the lymphatics from the front

of the chest and mamma; the other glands are placed along the lower margin of the posterior wall of the axilla, which receives the lymphatics from the integument of the back.

Therefore, may we not conclude that during gestation and the development of the mammæ the axillary glands became stimulated and enlarged, and in this way Mrs. R.'s supernumerary breasts were developed?

THE IMPORTANCE AND TIME OF RESTORING THE LACERATED PERINEUM.

By James H. Letcher, M.D.
Henderson, Ky.

I shall not write at length upon this subject, but merely make brief mention of it, and my excuse for introducing it at all is an apprehension that many of us fail to recognize the gravity of this lesion, and what neglect or improper treatment of it means to the one receiving it. My remarks have reference to the lacerations that occur during parturition, and all that I can hope for by their presentation is that our attention may be called to the matter, a discussion elicited, and thus we may in the future be constantly on our guard to look for and rectify these injuries. While I know there are many accoucheurs who do their whole duty in this particular, I am thoroughly convinced from observation, and I might say an earlier experience, that there are great numbers who fall far short of their duty. I shall not attempt to enumerate the grave results that so often follow these ruptures, as we are familiar with them. Suffice to say that the lives of many poor women have become a burden to them until by operative procedures relieved of their troubles; indeed many have been permanently afflicted.

There are not a few of otherwise fairly intelligent practitioners who claim that even in primiparæ there is seldom a rupture at all, and especially one of any importance, and

they have such views simply because they do not, *as they should*, after the third stage of labor, carefully examine their patients.

Then again there are some who for various reasons are averse to resorting to any operative procedures, however simple, who do not *want* to find such an injury, and hence do not search for it.

We know that with the great majority of primiparæ, regardless of complexion, color, and almost of age, there is a laceration to a greater or less extent; and it is my opinion that unless the rupture is of the third or fourth degree it is not repaired at all, and when the primary operation *is* done oftentimes it has been so hurried, or the proper instruments were not at hand, so that the results are far from satisfactory, perhaps there being scarcely no union, or merely the skin, not the muscles, uniting.

If there be the shadow of a doubt about a laceration having occurred, the accoucheur should carefully examine the parts, which is best done by having the patient on her side, and raising the upper buttock with one hand, while one or two fingers of the other hand, placed in the rectum, pushes its anterior walls into view. In this way an external and most internal lacerations can be recognized, but some rents of the submucous tissue may be hidden (and these are the wounds that are ofttimes followed by the gravest results), so that a still more accurate inspection with the vaginal walls held aside by retractors should be made.

One should not permit his own natural modesty or that of his patient to prevent his making this careful examination.

A word as to the *time* of operations, which are classed as primary, intermediate, and secondary. The text-books for the past twelve or eighteen years have urged the imme-

diate closure of the rent, and for several reasons this should be done. Among them is, (1) that vivifying the parts is not required, and hence you do not have to destroy tissues to get a raw surface; (2) from pressure there is perhaps a sufficient benumbing of the parts to prevent pain, and of course the use of an anesthetic is obviated; (3) or should the rent have been made with forceps, possibly the patient is still under the influence of the anesthetic; (4) the parts are in a relaxed condition, so that their approximation can be accomplished with a minimum of traction; (5) your patient has at this time to remain in bed any way; (6) with a proper approximation of the raw surface there is really less danger of septic absorption; (7) the avoiding of the discomfort and pain attendant upon granulation; and lastly, also that pending the time until the secondary operation.

These advantages of a primary union should be utilized, and consequently every obstetrician should at the time, if needs be, become a surgeon and be thoroughly versed in the management of these mishaps. He should never attend a case of parturition without being fully equipped to deal intelligently with such an emergency, and in the severe cases no small amount of skill is required for their repair. Should he not have with him suitable instruments for closure of rupture immediately after expulsion of the placenta, he had best defer the operation for twelve or twenty-four hours until he *can* prepare himself, rather than attempt it and make a partial or perhaps complete failure.

In some cases where the patient's condition is grave from a prolonged and difficult labor, and the rents extend far up the vaginal canal, or where there is a serious disease of ovaries or tubes, with possible danger of peritonitis, it might be advisable to do the *secondary* operation in the mean time, and, till the granulating process is over with,

contenting one's self with keeping the parts as clean as possible with gentle disinfecting vaginal douchings.

In slight ruptures of fourchette, and even extending down to depth of half an inch, an operation is not imperative, for healing by granulation will likely take place. A rent of twice this depth may thus heal; but while nature sometimes does beautiful work in her efforts to repair torn tissues, we should by no means depend upon her alone unaided. With her *best* work we may expect a mass of cicatricial tissue. The obstetrician, in dealing with this condition, should guard against the dangers of repairing the external rent and leaving the more important vaginal surface untouched. The hidden tears, those not readily recognized upon inspection, are of more frequent occurrence than some suppose, and entail more *serious consequences* than do injuries that are visible.

There is great likelihood, I say, of uniting the external parts and believing the results good, whereas a pouch has been created behind for the accumulation of discharges, the presence of which positively prevents union of tissue that otherwise might have healed. Not only this, but he further subjects his patient to increased danger of septic absorption.

I have never seen the cloven crutch (so much praised by some) used, but am disposed to believe that it possesses some objectionable features, and will not take the place of careful assistants.

I have purposely refrained from speaking about the *cause* of the injury, methods of attempting its prevention, the various ways of closing the rupture, etc., simply because of my wish, as first stated, to impress upon many of us the ofttimes seriousness of these wounds, and the desirability of *searching for and remedying them at the proper time.*

ELECTRICAL ILLUMINATION OF THE BLADDER.

By W. R. Blue, M. D.
Louisville, Ky.

The subject I bring to your notice to-day is one which, after lying in a quiescent state for a number of years (due to clumsy and poorly made instruments), has received a new impetus, and is one to-day in which our foreign brothers are very much interested. Only a few men on this side have given the subject the attention it so well deserves, and I trust this humble attempt of mine will be of some interest to you all.

I think it best to here describe the instrument that is used for illuminating the bladder. It is called the cystoscope, and as now made is a perfect instrument. There are two makes of this instrument, namely, Leiter and the Nitze. The former is considered the best, it being more practical. I will now describe the instrument roughly, as time will not admit of a perfect description. There are two forms of the cystoscope. In the first the window and light are on the concavity. This is intended for examination of the roof and sides of the bladder. It can be used, however, for examining the entire viscus by a rotary motion. The second instrument is the Brenner modification of the Nitze-Leiter instrument. The window and light are on the convexity, elbow, and beak. The Brenner modification consists of a small tube soldered on to the

shaft of the instrument which terminates just below the window. This modification serves three purposes: First, for catheterizing the ureters when practicable (in the female Dr. Brenner has successfully catheterized both ureters, but he has failed in the male); second, for changing the solution in the bladder without removing the instrument; third, by directing a jet of water or boric solution against a small growth we are able to ascertain, by the amount of motion or oscillation thus communicated to the body, whether we have a pediculated or sessile growth to deal with—the most important element in deciding our future treatment. The instrument has the form of a calculus sound of twenty-one French gauge, with an elbow and beak. Both instruments are made up of three sections: First, the beak which carries the electric lamp; second, the body or shaft which contains the telescope which increases the size of the image refracted through the window prism, and conveys the insulated wire from the battery to the lamp; third, the ocular end which is furnished with screws for the battery connection. But little need be said of the battery. The one I have is portable. It is made by Leiter, of Vienna, and contains six cells of zinc and carbon inclosed in a hard rubber case. The fluid used is the chrom-sulphuric, which you are all familiar with. The solution used to distend the bladder may be either a saturated solution of boric acid or sterilized distilled water, or, as Mr. Fenwick prefers, normal urine, should the bladder happen to contain a sufficient quantity. At St. Peter's Hospital, in London, boric solution is used. Grunfeld, of Vienna, prefers sterilized distilled water. I prefer the boric solution on account of its antiseptic properties, should the bladder become injured in any way by manipulation of the instruments, which is fortunately a very rare occurrence.

Value of the Electric Cystoscope. The value of the electric cystoscope may be estimated in various ways. The instrument may either afford us a clearer insight into pathological conditions of the bladder mucous membrane, and enable us to watch the progress of the disease and the behavior of the same under varying forms of treatment, or it may allow us to control our clinical observation and speculations by direct visual research, and rightly to assign the more prominent symptoms to definite causes, or finally it may at once elucidate for us the cause of obscure symptoms of urinary disease, of which we could otherwise obtain no certain clue without a cutting operation. The following I quote from Mr. Fenwick's excellent work on Electrical Illumination of the Bladder and Urethra:

"Pathological Conditions of the Living Bladder as seen by Electrical Illumination:

"*Acute Cystitis.* This has been well investigated by Dr. Finger, of Vienna, who restricted his examination to gonorrheal cystitis. The appearance according to that observer is as follows: The mucous membrane in proportion to the extent and intensity of the process is more or less infected. It is especially changed at the neck of the bladder. This turgescence is either marked with greatly dilated vessels, or in very acute cases it is printed with hemorrhagic spots, streaks, and blotches, or it appears of a uniform red color. The epithelium is either collected in lumps or is in long thready streamers, which float in the contents of the viscus. Acute cystitis of other origin has about the same appearance."

Chronic Cystitis. The cystoscopic appearance of chronic cystitis depends largely upon the degree of the attending inflammation. If slight, the mucous membrane is strikingly white and gelatinous looking. Its thickness as measured by the rugæ is increased. The anastomosing vessels

are absent, while here and there lumps and streamers of muco-pus are observed attached to the surface.

Tuberculous Disease of Bladder. The cystoscope definitely localizes a tubercular lesion, and indicates the utility or inutility of a supra-pubic cystotomy in order to scrape out the deposits.

Foreign Bodies. Fillenbaum's case stands first in the literature. It is as follows: Herr Franz R., age fifty-four, had tabetic atony of the bladder for some years, and was in the habit of relieving himself with a Nelaton catheter. He was awakened one night by a call to micturition. He passed the catheter in the dark, and evacuated the bladder. Thereupon he must have fallen asleep without withdrawing the instrument, for on awakening he found to his horror that the instrument was nowhere to be found. A diligent but fruitless search was made, and as he suffered no inconvenience his story was doubted by his attendants. A thorough examination with sound and lithotrite failed to reveal it. On the following day a cystoscope was used, and there came into view a symmetrical, elongated, yellowish body, which was the catheter, covered with a yellow urinary deposit. There are many other cases similar to this where, after careful search with sound and lithotrite, the cystoscope has revealed the object sought.

Calculi. Calculi often form very pretty objects under the electric light. They are readily diagnosed, and that without the manipulation which is often needed to demonstrate their presence with a sound. They usually appear as brownish or whitish marble-like bodies resting on the bladder base, and throwing a double shadow on the subjacent mucous membrane. Dr. Nitze thus describes a case which he demonstrated to Prof. Von Bergmann: Directly the prism had penetrated the bladder one perceived a group of stones with faceted surfaces, like piled-up chalk blocks.

The rotation of the cystoscope slowly on its axis caused the picture to be changed like a kaleidoscopic view. Two large lumps built together a gate-way opening through which the mucous membrane could be seen, but at the next moment there was a sudden downfall, and finally one stone dropped across the prism and seemingly plunged the bladder into darkness.

Encysted Stone. Schustler reports a case of a man, age sixty-eight, suffering from hypertrophy of the prostate and the presence of a large soft vesical calculus. On attempting to remove the stone with forceps, after lateral lithotomy, it broke into pieces, and the fragments were removed piecemeal. Subsequently stones were found from time to time by means of sound, and were removed through the perineal wound. Despite of four months' thorough treatment the bladder symptoms remained unabated, and the cystoscope was therefore introduced. This examination showed, to the surprise of all who had watched the case, the presence of a stone which was confined in a diverticulum deep in the base of the bladder, and which projected but a slight way out of the mouth of the sack.

Growths of the Bladder. Growths of the bladder as seen by the electric light often form objects which Dittel has justly designated as truly charming. More especially worthy of his praise are certain forms of villous papilomata; those whose long and delicately-branched leafy processes, rose red in color from their capillary blood, float freely about in vesical water, trembling with every movement of the beak of the cystoscope, swaying at every eddying rush of the ureter streams. The entire picture is like some small aquarium, with an attached sea anemone moving its delicate tentacles around in search of prey. If the prism is placed near the villi, their vessels with every trunk, even to the finest branchlet, can be seen.

THE PLASTER OF PARIS JACKET APPLIED BY THE HAMMOCK METHOD IN POTTS' DISEASE OF THE SPINE.

By Samuel E. Milliken, M. D.*
New York.

The conviction that the protection of a diseased joint is best accomplished by fixation or immobilization caused me to choose this subject for my paper. I might dwell at length upon the efficient mechanism of the many so-called extension splints while under the physician's own eye, only to get out of order when the patient has been placed under the care of the parents or a nurse. They often return for observation with the apparatus exerting only the part of a protection without extension. The various extension splints employed for tubercular and other lesions of the hip-joint, when it is not the idea to limit flexion but prevent stitch, illustrate most forcibly that protection alone is the only good obtained; and not even a high shoe employed on the unaffected foot at the same time the corresponding two inches increase in the length of the splint over that of the affected limb, it (protection) could not be afforded; the consequence would be that our patient would return, with each step made, forcing the whole weight of the body against the diseased articular surfaces. The above principle is cited only to make more strong a matter which has caused me to consider and practice a mode of applying the plaster of Paris jacket in Potts' disease which has proved

* Read by request.

very serviceable in children, who resist from fear the suspension from the chin and axillæ by means of the tripod.

When the idea of extension began to occupy the medical and surgical minds so fully it was our place to apply it to every case, going so far as to cut the plaster of Paris cast into segments that the extension screws might be permitted to work. That once much-lauded principle has been abandoned entirely in the treatment, but the method of suspending all patients for the application of a jacket is largely practiced by our general and orthopedic surgeons to-day. Before describing the hammock method, which is not new, I wish to say that it is only intended for children, as they have such a holy dread of being suspended, causing them to resist with all their might, and in so doing many times prevent the application of a jacket which will press uniformly at all points.

The younger the subject the greater will be the fear and resistance. The expense and trouble of obtaining a proper armamentarium for the suspension method is an obstacle which the general practitioner easily abates by employing the hammock.

Hammock Method. For the application of the plaster of Paris jacket the body should first be covered with a skin-fitting thin shirt, preferably seamless. The plaster bandages should be made of coarse woven crinolin, four inches wide and from three to four yards long, the plaster rubbed into them as the bandage is being rolled. It is important to use the best dental plaster, and know that it was free from moisture when the bandages were made. If they be not manufactured for each case, it is of the greatest importance that on the day to be employed they should be placed in an oven and baked. By this precaution rapid hardening of the plaster will be insured, and the addition of salt will not be required to hasten the process.

Apparatus. By means of a strip of ordinary domestic four feet long and six or eight inches broad, stretched between the backs of two ordinary chairs, the child is placed either in the prone or supine position, with an assistant for its arms and one for its lower extremities. The weight of each assistant is quite sufficient to prevent the tilting of the chairs, and the hammock is complete.

All the bony prominences, such as the spinous processes over the kyphosis and the crests of the ilia, are protected from pressure by one or two thicknesses of blanket before any plaster is applied. Each bandage is immersed in a basin of water until completely saturated, that no lumps may be present or delay entailed while being applied. The first roll should begin either at the pelvis or axillæ, and from four to six thicknesses applied uniformly, which, if allowed to harden without the patient being disturbed, will be quite sufficient support.

The minimum amount of plaster will insure the greatest comfort for the wearer of the jacket. The plaster having become hard, the strip of muslin may be cut off even with the plaster edges, or, by having passed inside the seamless shirt, it can be entirely withdrawn.

The plaster is now cut out under the arms and over the thighs, that too much pressure may not be exerted in the axillæ, and the patient be permitted to sit without discomfort.

The jacket may be worn without discomfort for from one to six months, depending on the weather and the absence or presence of foreign bodies, such as coins, buttons, and the like, which are often a great source of annoyance in producing excoriations.

Conclusion. The advantages of the hammock over the suspension method are: (1) Cheapness; (2) Practicability; (3) Efficiency, by being able to get a perfect cast of the body without resistance from the child.

TUMORS OF THE NECK.

By W. L. Rodman, M. D.
Louisville, Ky.

Forehead. Neoplasms in this situation are not particularly common, the one occurring with the greatest frequency being the congenital dermoid cyst. It is found near the orbital margin, especially its outer angle.

The simple sebaceous cyst may also be seen upon the forehead.

Fatty tumors are not infrequently seen in this locality, and are likely to be mistaken for cysts, an error I have twice known to be made.

Cavernous nevi are sometimes seen just above the eyebrows. I recently saw a growth of this description nearly as large as a small orange in the person of an infant six months old. It was removed successfully by W. O. Roberts at the University clinic. The vessels, which were very large, entered the tumor from above, and were easily secured. The hemorrhage was insignificant.

Malignant disease of the forehead is uncommon. The only instance of this affection which has come under my notice was in the person of a man, sixty years of age, sent me from Indiana, beginning as a small, hard nodule, above the left eyebrow. When I first saw the tumor, several months after its inception, it had extended well on to the nose, between the eyebrows. It was hard, and the seat of fugitive pains. The skin was discolored, but not ulcer-

ated. There were no enlarged glands. The patient being advised of the probable malignant nature of the growth, it was extirpated as thoroughly as could be done, the tissues being removed well down to the bone. A speedy recurrence was predicted. The operation was done on October 14, 1889. The growth was carefully hardened in Muller's fluid, and examined by a competent microscopist. He reported it to be an epithelioma, though its microscopical appearance and clinical history rather indicated scirrhus. The struma was very abundant, creaked under the knife, and was seemingly very like scirrhus of the mammary gland. Recurrence took place about ninety days after removal, but the patient did not consent to a second operation until March 4, 1890, nearly five months after the first. About sixty days after the second operation, at which time chloride of zinc was freely used in addition to the knife, repullulation was noticed. It was not deemed expedient to attempt a further removal, as the growth had infiltrated all tissues over the nose, in both eyebrows and lower part of forehead. The lymphatic glands of neck and submaxillary region were also enlarged. The man died several months afterward with brain symptoms. I did not see him after the second operation, but from the history of the case am satisfied that there were secondary deposits in the brain. An autopsy was declined.

Cheek. The simple sebaceous cyst is common on the cheek, and is by far the most common tumor seen in this region. It is frequently situated about one inch in front of the ear, growing in the beard of men. It is less common in females.

Dermoid cysts are rare, though occasionally seen in this locality.

Verneuil describes an hypertrophy of the sweat glands sometimes found in the cheek. The tumors are usually

small, varying in size from a small shot to a marble. These contain a fluid, which exudes upon pressure most usually. Fatty and other solid tumors are rare affections.

Malignant diseases of the cheek, the rodent ulcer of most authors, is more common than any other growth save the sebaceous cyst. No distinction should be made between rodent ulcer and epithelioma, as they are clinically and histologically the same. Epithelial growths in this situation run a chronic course.

Lupoid ulceration is also common in this region, though less so than they are on and around the nose. Its frequent occurrence in impubic children, especially girls with fair skin, blue eyes, and light hair, in a word, strumous subjects, sufficiently distinguishes it from malignant disease, which is most obnoxious to middle and advanced life. The appearance of the lupoid ulcer is also characteristic. Its edges are not raised and indurated as in epithelioma, nor does the ulcerative action steadily advance as in the latter affection. It heals wholly or partially without treatment, each attempt at repair being in all probability followed by a relapse. Epithelioma never heals spontaneously.

Papillomata or warts are particularly common about the face, not so often perhaps on the fleshy cheek as near the nose and eyelids. Warts appearing after forty years of age, at which time epithelial tissues are inclined to run wild, can, if subjected to much irritation, as by shaving over and picking at them, be readily transformed into epitheliomata. They should be watched carefully, and upon the first evidence of their assuming an untoward course be promptly excised.

Nose. Tumors growing from the outer aspect of the nose are rare. Dermoid cysts may occur over the bridge near the fronto-nasal suture.

What has been described as lipoma of the nose by many writers is in truth an hypertrophied condition of the skin

covering the tip abounding in blood-vessels. The skin is discolored. There may be one or more growths. This condition is only found as a rule in elderly men who have been good livers, and perhaps free drinkers. Alcoholic potations seem to play a secondary part to overindulgence in the pleasures of the table. These tumors are very muscular, and in the removal of one of them Blizzard lost his patient from hemorrhage. One instance of this rare affection, occurring in a man of sixty, has come under my observation. In this case the tumor was quite round, about the size of a large walnut, and attached by a sort of pedicle to the tip of the nose. It had existed many years. The skin over its surface was somewhat reddened. It was not painful, and the only inconvenience it caused its host was by interfering with eating and expectoration. It was rather comical to watch him hold his tumor out of the way before spitting.

Malignant disease of the nose, epitheliomatous in character, is its most frequent neoplasm. It begins at the alæ, sides, and tip, in the order named. It is to be remembered that the nose is also the most common site of lupus. The frequency of epithelioma and lupus in this situation, together with their somewhat similar appearance to a careless observer, has led to considerable confusion in the literature of these affections.

Lupus rarely begins after thirty; epithelioma rarely before thirty-five.

Tumors of Nasal Cavities. The different forms of polypi are the only growths frequently seen in the nasal fossæ.

The most common is the mucous polyp, growing either singly or in numbers from the superior and middle turbinated bones.

The fibroid or hard polypi grow either from the turbi-

nated bones, septum or wall of the canal. They sometimes undergo sarcomatous change.

The naso-pharyngeal polypi are either fibromas, sarcomas, or fibro-sarcomas. They grow from the basilar process and bone of the skull projecting into the pharynx.

Other growths are very rarely seen in the nasal passages. Enchondroma, exostosis, and columnar epithelioma may occur. Sarcoma of the nasal cavity is often secondary to disease of the antrum.

Upper Jaw. Being so frequently the site of neoplasms, most of which are malignant and rapidly destructive to life, as well as on account of the formidable surgical measures necessary for their relief or amelioration, the upper jaw has ever been a region of intense interest to surgeons.

Tumors growing from the superior maxillary bone may begin in the antrum, alveolar margin, body, or palatine process, about in the order named. These growths are cystic and solid.

A careful analysis of 600 tumors reported from various trustworthy sources, most being reported by Gross, Billroth, Weber, and Gurtt, shows these neoplasms to occur in their order of frequency, as follows: Sarcoma and carcinoma, $.76\frac{8\,8}{1\,0\,0}$ per cent; cystomas, $.08\frac{5\,0}{1\,0\,0}$ per cent; osteomas, $.06\frac{5\,6}{1\,0\,0}$ per cent; fibromas, $.03\frac{6\,9}{1\,0\,0}$ per cent; enchondromas, $.02\frac{7\,6}{1\,0\,0}$ per cent; polypi, $.01\frac{2\,5}{1\,0\,0}$ per cent; angiomas or nevi, $.00\frac{3\,7}{1\,0\,0}$, or ⅓ of 1 per cent.

So that, roughly, three fourths of these tumors are malignant, and only one fourth benign; 91½ per cent solid, 8½ per cent cystic.

No age is exempt from these growths. As to the relative frequency of sarcoma and cancer it was formerly thought to be a stand-off. Modern pathology with more careful examination of these tumors greatly increases relatively the number of sarcomata. The so-called encephaloid

cancers of the upper jaw are encephaloid sarcomas. Epithelioma is the only form of carcinoma described in this situation by modern authors. It exists under both the squamous and tubular forms—the latter when starting from the glands of the mucous membrane of the antrum.

It is safe to say that at least one half of all tumors of the upper jaw are sarcomas, one fourth epitheliomata, and one fourth benign; 16½ per cent of the latter being solid, 8½ cystic.

Of the sarcomas, which are so common, we have the round-, spindle-, and giant-celled formations. The round- and spindle-celled varieties usually spring from the antrum and body, while the myeloid growth selects by preference the alveolus, making one of the forms of epulis. It is in this situation the least malignant of all sarcomas, and when freely excised does not usually recur. I have operated upon several of these growths, where the giant cells were most distinct, and have been gratified to see a permanent cure effected. *Per contra*, the round- and spindle-celled varieties, springing from the antrum or elsewhere, are exceedingly malignant. When growing within the antrum they ultimately project into the nasal cavity, finally plugging the nose and encroaching upon the larynx and pharynx.

Epistaxis is of frequent occurrence, and lends its aid in destroying the victim.

Cysts, next to malignant tumors the most frequent, are of three varieties: (1) Simple cysts, solitary or multiple, growing from the mucous membrane of the antrum, giving rise to the condition commonly known as "dropsy of the antrum." (2) Multilocular or epithelial cysts, found on the interior of the bone, usually beginning by the downward growth of epithelium from an alveolus. Though epithelial in structure they are innocent clinically. The third variety is the interesting dentigerous cyst occupying the place of a canine tooth most generally.

The solid benign tumors are uncommon. Osteomata are of the hard variety, and occur in the antrum. Fibromas and chondromas together comprise only six per cent of maxillary (upper) tumors. They originate chiefly from and above the alveolar margin.

Nevi or angiomata are extremely rare; so much so as to be clinical curiosities. They begin in the mucous membrane of the antrum, melt away its front wall, pulsate synchronously with the heart, and are purplish in color.

Tumors of the antrum, be they benign or malignant, ultimately produce great deformity, encroaching upon nose, mouth, and eyes, greatly disturbing the symmetry of the face. Their diagnosis is sufficiently easy.

Lower Jaw. Tumors, benign and malignant, are more common in the lower jaw than in the upper. They grow from the periosteum, surface, or interior of the bone. They also attain a larger size in this situation than when occurring in the superior jaw.

An examination of more than six hundred cases reported by Gross, Gurtt, Billroth, Weber, and others, show the general nature of these tumors to be about the same as in the upper maxilla. There were of malignant tumors, sarcoma and carcinoma, $.80\frac{19}{100}$ per cent; osteomata, $.04\frac{25}{100}$ per cent; cystoma, $.04\frac{25}{100}$ per cent; fibroma, $.04\frac{09}{100}$ per cent; enchondroma, $.06\frac{87}{100}$ per cent; angioma, $.60\frac{33}{100}$ per cent.

It will be seen that malignant tumors comprise a large per cent of neoplasms of the lower than they do in the upper jaw—$.80\frac{19}{100}$ against $.76\frac{83}{100}$ per cent.

Here, as in the other region, sarcoma is more frequent than carcinoma.

The fibroma, chondroma, and osteoma generally spring from the bone between the angle and the canine tooth. The chondroma more likely affects children; fibroma, young adults; the osteoma, elderly subjects. The osseous tumor may exist as cancellous or ivory-like growth.

Cystic tumors which attain considerable size grow, as in the upper jaw, on the interior of the bone.

The sarcoma is found as either myeloid, round, or spindle celled. When growing from the medulla the true bone is absorbed and a capsule of new bone is thrown out by the periosteum. In such cases the "egg-shell crackling" would be found.

Removals of part or all of the lower jaw give most gratifying results, and these operations can usually be undertaken with reasonable assurance that permanent cures will be effected.

Tongue. The only tumors found in the tongue sufficiently often to claim the attention of the clinician are, cancer, which always exists in the form of epithelioma, and cysts, which are either solitary or multiple. Fatty, fibrous, cartilaginous, and sarcomatous growths are of such infrequent occurrence as to be rarely seen. Erectile and papillomatous tumors are uncommon.

Epithelioma is common enough. It usually occurs in persons past forty years of age, and is by far more frequent in men than women.

S. W. Gross examined 133 cases, and found that 82 occurred in persons over and 51 in subjects under fifty. The disease begins as a rule on the margin of the organ, first showing itself as a fissure or tubercle, which soon ulcerates. The disease is very painful, and destroys life usually within a twelve-month. The lymphatic glands are implicated early in the action. Differential diagnosis is sometimes to be made from syphilis. The age of the patient and the effect of specific treatment determine the nature of any doubtful case within a very short time.

A man forty-one years of age, recently under Prof. D. W. Yandell's care, was destroyed by epithelioma in nine months. There is no situation in the entire economy

where malignant disease entails more suffering and proves more rapidly fatal than when occurring in the tongue. General Grant, after much suffering, died within the year.

Cystic tumors are single or multiple, and present themselves superficially or within the substance of the tongue. They are mucous in character, and due to the occlusion of ducts. They are small, not larger than a buckshot.

Dermoid cysts are sometimes found in the tongue. Erectile tumors, when found, are situated near the apex of the organ. They occur in the young, and are likely to be associated with similar growths elsewhere, as in the lip. They are bluish in color, and enlarge during crying or other mental emotions.

Papillary growths or warts are found on the edges, under surface or lip of the organ.

Lips. Tumors of the lips are common. The most frequent is the small mucous cyst which is almost peculiar to the lower lip.

Next in frequency are the different forms of vascular tumors, and they are almost entirely limited to the upper lip.

Epithelioma is common enough. It is an interesting fact that this affection is nearly always situated in the lower lip. Of 560 cases analyzed by Gross, only 20, or three-fifths per cent, appeared in the upper lip.

In 150 of his own cases Gross only saw it in the upper lip twice. Bryant places the relative frequency of the disease in the two lips as twenty-five to one. I have never seen it in the upper lip. Epithelioma is by far more frequent in males than in females, the proportion being seventeen to one. It is rarely seen under forty-five, being preeminently an affection of advanced age. I have seen two cases, however, within the past year, in men respectively thirty-four and thirty-five; the former sent me by Dr. T. A.

Graham, of Jeffersonville, Indiana, the latter at the University clinic. The theory so long fashionable, that it is caused by smoking short-stem pipes, is perhaps untenable. The majority of authors are against this opinion.

Parotid Gland. Tumors of the parotid are not uncommon. Gross gives the record of ninety-five cases collected by Billroth, Bruns, and Weber, the diagnosis in all instances being confirmed by the microscope. Adding to these two cases in my own practice, one of which was an enchondroma larger than a fist, removed four years ago from a man still living in Cloverport, Ky., the other a cyst, removed from a middle-aged man from Knoxville, Tenn., who presented himself at the University clinic, we have 29 enchondromas, 20 fibro-myxo-chondromas, 26 carcinomas, 9 of which were encephaloid, 10 epithelial, and 7 scirrhus, 6 fibromas, 6 cystomas, 4 melanotic adeno-sarcomas, 3 sarcomas, and 3 myxomas.

Taking the 29 pure chondromas and 20 fibro-myxo-chondromas, we have 49 or 50.51 per cent of all tumors of this gland of a cartilaginous nature. The cancerous tumors are next in frequency, comprising 26.78 per cent.

Specimens of mixed neoplasms are very frequent in this situation.

The benign tumors, which comprise 67.04 per cent, are movable, grow in early and middle life; the skin over them is not discolored, have little tendency to cause pain, and do not cause paralysis of the facial nerve. The converse is true of the malignant growths.

Sir William Ferguson, whose experience with these tumors has been larger than any other surgeon, says: "If it were evident that the tumor slid freely over the subjacent textures, I should not hesitate about using the knife, whatever might be the bulk of the disease; . . . but if the tumor seemed fixed, its limits not clearly defined,

or an attempt to move it caused pain, I should not readily be induced to use the knife, however small the mass might be."

Submaxillary Gland. Enchondroma, fibroma, adenoma, lymphoma, and cysts are the benign growths most likely to be met with in this gland. Sir James Paget asserts that enchondromas are not so common in this gland as they are in the parotid—others claim that they are more so.

Of malignant neoplasms, we find sarcomas, lympho-sarcomas, and carcinomas, the latter being rare and usually of the scirrhus variety.

Sublingual Gland. The only growth which frequently affects this gland is "ranula."

Epithelioma is the only form of malignant disease, and it is infrequent.

Calculous formations are rare. Gross, in his large experience, saw only one case.

Dr. Cheatham sent me a married woman, about forty-five years of age, from whom I removed a very large calculus found in a ranula. It was removed four years ago, and a part of the cyst excised. No recurrence to date.

DIAGNOSIS AND TREATMENT OF DIPHTHERIA.

By Charles W. Aitkin, M. D.
Flemingsburg, Ky.

I desire to be as brief as is practicable with clearness, especially so, since at every meeting of the Kentucky State Medical Society since 1866 I have heard almost universal condemnation of "lengthy reviews" and "voluminous copies of authorities." The time is short, and the more subjects clearly, practically, and briefly brought before this body of practitioners of the "healing art" the more fully will we feel rewarded for the time spent in this Society's work. I want to refer hurriedly to the diagnosis of diphtheria before discussing the treatment. I do not know of any disease of which there is so much difference of opinion as to diagnosis by the physicians through the country districts. One practitioner may call every acute disease of the throat diphtheria, while another may be just the opposite, and never willing to call any thing diphtheria unless his patient is in a dying condition from that disease. It is unfortunate that we have so many extremists, as young practitioners are often led astray by hearing older doctors say "that they have not seen a genuine diphtheria for twenty years, but have had numerous cases of 'ugly sore throat,'" never once diagnosing what the affection was in their cases of "ugly sore throat." In one extreme they are all diphtheria, in the other not a single case. The latter class of practitioners coincide with the laity's diagnoses

of "ulcerated sore throat," "putrid sore throat," or "blisters in the throat," while in reality these conditions are either diphtheria, scarlatina, or follicular tonsillitis in nearly all cases. Of course, syphilitic or tuberculous ulcerations of the throat or aphthous pharyngitis are not to be considered as ever being confounded with diphtheria. In scarlet fever the diffused redness with the eruptive condition of the mucous membrane of the soft palate and uvula, without the diphtheritic membrane, and the difference in the early temperature are sufficient differential points for any careful observer, even before the skin eruption appears. In follicular tonsillitis the diagnosis is hardly so easy in discriminating from diphtheria.

The following table is the best differential chart I have ever seen:

DIPHTHERIA.	FOLLICULAR TONSILLITIS.
Invasion gradual, often insidious.	Invasion abrupt.
TEMPERATURE.	TEMPERATURE.
Rises gradually, may be high throughout. Course of fever irregular.	For first twenty-four hours 102°–105° F.; lasts three days.
Often little disturbance till the third day, marked asthenia.	Most general disturbance first day, no tendency to asthenia.
PULSE.	PULSE.
When rapid becomes feeble, may be slow and irregular.	Rapid and full.
Glandular swelling almost invariably present.	Glandular swelling usually absent.
Reaches height in four or five days.	Reaches height in twenty-four to thirty-six hours.
Nasal regurgitation and bloody discharge often present.	No nasal regurgitation or bloody discharge.
Albuminuria is present with low temperature.	Slight albuminuria only if temperature is high.
Highly contagious.	Contagion doubtful.
Paralysis common, even after milder cases.	No paralytic sequelæ.
Prevails epidemically.	Cases may have a common origin, *e. g.* sewer gas.

EXUDATION.	EXUDATION.
Fiery blush over whole throat.	Blush usually on tonsils only.
Isolated spots, coalesce—gray early, greenish later.	Isolated yellow spots or continuous membrane.
On tonsils, uvula, and pharynx.	On tonsils only.
Mucous membrane bleeds readily upon removal of diphtheritic membrane.	Mucous membrane does not bleed upon removal of the gray spots.
Infiltrates tissue and can not be wiped off.	Superficial, often can be wiped off, not adherent.
Reforms if forcibly removed.	Does not reform after removal.
May not appear for forty-eight hours.	Appears early.
Spreads.	Does not spread.
Frequently unilateral for two days.	Always bilateral.
Clears off slowly, lasting from five to twenty days.	Clears off quickly.

I do not refer to the microscopical examination of the membrane, simply from the fact that at the present time there are so few physicians outside of the larger cities who can in any reasonable time obtain the report of a microscopist.

The points given in diagnosis are referred to only on account of the wide difference of opinion that prevails in the rural districts as to what diphtheria is as diagnosed from tonsillitis. No doubt that many cases of diphtheria die because the physicians neglect to carefully examine the throat, or even if they should see a slight diphtheritic membrane they act upon the advice of Oertel, who said regarding mild diphtheria, "to act only when new and most alarming symptoms present themselves." Jacobi truthfully says "this is decidedly perilous." Why wait for most alarming symptoms when they may be aborted?

In referring to the treatment I shall say nothing regarding prophylaxis, but only consider instances wherein the disease is developing or has fully developed. Upon examining the throat, if there should be any unnatural blush

the parts should be washed every hour with some cleansing solution. I prefer either hydrogen peroxide in full strength or the following wash:

Kali chlorat., ... ℥ ij;
Chloral hydrat., ... ℈ ij;
Bromo-chloralum, ... ℥ iv;
Aqua destillat., q. s. ad., . . . ℨ iv.
M. ft. sol. Sig: Use as throat-wash every hour.

During epidemics I have seen the preceding tonsilo-pharyngitis relieved by the wash above named, so that no membrane appeared; thus to my mind bringing about a healthy mucous membrane instead of the inflamed surface in which the Loeffler bacilli would find a fertile soil for their habitat. But when there is a distinct diphtheritic membrane, even if there be only slight patches tending to coalesce, I would not advise one to rely upon any gargle.

If we leave the throat without treatment when the membrane is forming, and notice it at intervals of six hours, it is surprising to see how rapidly the coalescing of the various membranous deposits will take place. To get an attack of diphtheria under control we should treat promptly, thoroughly, and vigorously; we must have our directions carried out to the letter between our visits. The diphtheritic membrane, not simply being a deposit but infiltrating the pharyngeal mucous membrane, gives rise to the constitutional symptoms by the absorption of its specific poison. Then if we remove this diseased membrane by the aid of any drug that will not injure the pharyngeal structures, but entirely destroy the diphtheritic membrane, we will have the drug that gets rid of the local disease which is causing the constitutional disturbance.

The "liquor ferri subsulphatis" is not a new drug, nor is it a new one in the treatment of diphtheria, yet its effi-

ciency is not urged. Dr. Whittaker has directed its use in pharyngeal diphtheria to his classes for several years. Others recommend it, but the minutiæ of its use is not generally considered among country doctors. A physician told me that he used "a fifty-per-cent solution of this preparation in the treatment of diphtheria, making an application once in twenty-four hours;" he condemned it, as his cases grew worse. Another doctor used "one half teaspoonful in a glass of water, to be applied several times a day as a gargle." He too thought it failed, like "all other drugs recommended." When I first began to use Monsel's solution about three years ago, I diluted it, but I never then got the effect from it that I do now. During a recent epidemic of the disease under consideration I, with my associates in practice, Drs. McDowell and Garr, have treated over one hundred and twenty cases, and have had only one death. In the case that died Monsel's solution was not used; in fact the membrane was not seen in the pharynx until the larynx was involved, and owing to the extreme constitutional depression a tracheotomy was not done, and no effort was made to enter the larynx with an applicator.

While this epidemic was upon us we saw cases in every stage, from the beginning, where there was a fiery blush all over the pharynx with slight deposits showing a tendency to coalesce and spreading rapidly, through the stage where there was complete draping of the membrane from uvula and arches of the palate; and further on, when the whole pharynx was literally covered with the membrane, aphonia existing; then when the membrane had extended into the nasal cavities, and in three cases where it was found in the larynx and there was difficulty in both inspiration and expiration. If we saw the case early we had the throat washes heretofore referred to used every hour as gargles, or had the nurse to wash the throat as effectually as possi-

ble every hour in children too young to gargle, directing the nurse to use a swab made with absorbent cotton, or in very young children the finger, protected with absorbent cotton covered with soft muslin, was used in place of the swab; in conjunction with this Monsel's solution, full strength, was applied with the swab every six hours to all the diseased membrane. If the membranous deposit was very heavy we would apply the Monsel's efficiently every one or two hours for one day and night, and by that time the membrane would be coming off so well that we would then use it six hours apart until every particle of the membrane was removed. Never try to tear the membrane away by force, but make the application firmly and to every diseased part. The styptic effect of the iron prevents hemorrhage, if any would occur during this gradual destruction of the membrane. After four or five applications of this drug the membrane begins to disappear, you will see the patient spit it out, and frequently large shreds will come out on the swab. The application is unpleasant and may cause the patient to vomit. After a few applications, however, the patient will become accustomed to the green-persimmon taste, and will want the application made for the relief it gives.

When the nasal passages became diseased we applied the same preparation on a cotton-wrapped probe, passing it back to the pharynx and gently but thoroughly touching all the membrane in the nasal cavities. In case the nasal passages are too much occluded by the membrane to allow the probe to pass clear back without using force, have the nurse to apply it often and make the application a little further into the nasal passages each time. In this way an opening can be effected within one day's time. As soon as there is an opening through the passages application can be easily made to all diseased membrane and the cavities washed with a cleansing disinfectant solution.

Regarding the laryngeal cases, in one we tried the bichloride-of-mercury treatment and medicated steam inhalations. This is the case we lost. In the other two cases we made applications of Monsel's solution every four hours directly to the membrane with a laryngeal applicator wrapped with absorbent cotton and applied by aid of laryngoscope. In one case the false membrane in the larynx had entirely disappeared after two days, and in the other it disappeared on the third day. The intralaryngeal applications would always provoke a paroxysm of coughing, and consequently the patient would readily expectorate all loosened membrane.

The constitutional treatment was altogether supportive. The heart was supported by digitalis and occasionally stimulated by alcoholics.

It is but just to say that during this epidemic there were fourteen deaths in and near our town from diphtheria. We are not advised as to what treatment was used in these cases, except that a tracheotomy was done in one of the fatal cases.

THE CODE OF ETHICS.

By I. A. Shirley, M. D.
Winchester, Ky.

Believing as I do that the present excellent Code of Medical Ethics is practically perfect, I at first thought I would have nothing to say, but in deference to the appointing power I have concluded to make an effort to render operative some hitherto dormant but all-important portions of the existing document, by briefly calling your attention to one or two of them, and again emphasizing a few superfine expressions found therein.

In the first place, a very serious impediment to the pleasure and profit of practicing our profession is to be found in the non-uniformity, and in many instances the unscrupulousness, of medical men who willfully and maliciously undercharge. A rigid adherence to the advice of the Code when urging the adoption of an established scale of fees for every town and community can not be too strongly insisted upon, due allowance being made for the circumstances of the patient. A doctor who undercharges simply to get practice should be harshly dealt with. If the laity would only view such conduct in its proper light, namely, that a physician who underworks his fellows is charging only what he himself knows his services to be worth, this unprofessional conduct would soon cease.

In the second place, the article that so beautifully portrays to the laity their obligations to the profession must

ever remain a dead letter unless some means are devised of bringing directly to their notice what is reasonably to be expected of them. Granting that there is entire unanimity of this body in regard to the necessity of the above, the query naturally suggested is, how best to accomplish it? If we could only get all the people of the State together for a few hours while McCormack, Palmer, and Wathen opened the Code to them, they could not possibly go away without learning something of the obligations of patients to physicians; or of hygiene, urethritis, or salpingo-ovaritis. But, seriously questioning the peaceable and quiet submission of the laity to such an infliction, we must search for other means. The only remaining way of meeting the issue, it seems to me, is through the public press. I would respectfully suggest that a committee be appointed by this Society to inform the public, either by means of printed instructions sent directly to them or through the newspapers. It might not be amiss to place alongside of this, in addition, more punctuality in sending around the silver wheels, that the relatives, grandmothers, and old maid aunts, especially the neighbors, friends, and non-professional nurses, be asked to let up on their ever-ready recital of what cured them of a similar malady to the one at hand, when probably theirs was only a bad cold or malaria, and we are battling with pneumonia or a typhoid.

I have long doubted the propriety of the recklessness of the existing custom of rendering gratuitous services to the ministry. The grocer, the merchant, and even the druggist charge them for their wares, while the doctor, poor soul, whose all is invested in the knowledge he may possess, pills, and instruments, gives freely of these to the dispensers of divine grace without money and without price. There can be no question of the correctness of this when the minister receives but a moderate or necessary

salary; but when it comes to a hard-worked, hard-up doctor laboring day and night for a fat-salaried, well-fed, luxuriously-living, four-in-hand preacher of the gospel without remuneration, we cry aloud with the good man of old, "Consistency, thou art a jewel!" But, without recommending any change in the present state of things, we do earnestly yet respectfully request these distinguished beneficiaries of what we can do and give to hesitate longer in the future than they have in the past before indorsing every patent nostrum and traveling empiric.

We are happy to state, Mr. President, that so far as we are informed there has been no disposition on the part of this or any other State medical organization to go off after the new-fangled idea of the New York State Medical Association of several years ago. The present Code of Medical Ethics of the Kentucky State Medical Society is precisely similar to that of the American Association, which, being good enough for Gross, Flint, and Yandell, like the old-time religion that was good enough for father and good enough for mother, is also good enough for me.

Lastly, permit me to commend to every doctor in this broad Commonwealth, whether a member of this Society or not, or whatever his *'pathy* may be, if he has a proper regard for the dignity and well-being of his profession, to rally to the help of the State Board of Health in the matter of fighting quacks and empirics. With a united effort and a forward march all along the line, under the command of Major-General McCormack, we will soon drive the entire horde beyond our borders.

DUPUYTREN'S FINGER CONTRACTION.

By Steele Bailey, M. D.
Stanford, Ky.

The accepted theory of the cause of Dupuytren's contraction is that it is of constitutional origin, and while gout and rheumatism are the essential elements in many persons who suffer deformity from disease of the palmar fascia, I am impressed with the belief that syphilis may act as a primary cause also.

I am driven to this opinion by one case which was recently under my care; and while one swallow does n't make a summer the evidence in this instance is *prima facie*, and I trust that I may make it convincing to you. In the family to which this lady belonged, as far back as history goes, there has never been seen a case of gouty diathesis or rheumatic fever. I mean that neither disease with these folk is hereditary. While gout can be developed in any constitution, it is pre-eminently a disease in which heredity can be traced in fully sixty per cent of the cases. The family is one of wage-workers, abstemious in their ways, and rather noted for longevity.

It has been supposed hitherto that women were exempt from contractura palmaris; however, as there are exceptions to all rules, so it is on this occasion. The lady was of good social grade, sixty-seven years of age, and when I saw her first the fingers were permanently bent. I was consulted with reference to her general health, and also if

it were possible to remedy the existing deformity. While there was no pain coneected with the contraction, she was annoyed and depressed by constantly recurring inconveniences. To comb the hair, to change the dress, to lift a weight, to write, in fact to perform any manual duty was a burthen, if not an impossibility. The thumb on the right hand was drawn to the middle of the palm; motion was only possible between the first and second phalanges.

The fascia of the palm and the fibrous tissue of the inside of the fingers of this hand were diseased in a somewhat higher degree than on the left. But she was bad enough off in both members, so that life was hardly worth living. She frequently wished the gordian knot might be cut, and her desires were gratified in less than a couple of moons after my first visit by an attack of acute pneumonitis, which quickly did the work for her.

The disease began in the thumb and extended gradually. After a varying interval, the precise time she could not remember, the disease attacked the little finger of the left hand, and by degrees the ring and other fingers became involved. This patient in her earlier years enjoyed robust health; was never troubled with either rheumatism or gout. As a widow she had a small estate, which was inducement enough to attract a progressive gentleman many years her junior. He informed me that in an immoral moment he contracted syphilis from an "old flame" he chanced to meet, and without the consciousness of himself being bitten he did the honors at home, and, as he expressed it, "burnt the old woman." Treatment was given her by the family physician in complete ignorance to her of the real nature of the malady. She passed through the several stages, the disease being pretty well kept in abeyance. Several years were passed from the initial lesion of syphilis before the least sign of contraction of the palmar fascia became manifest.

The morbid process, as before remarked, began in the thumb by a little weakness, which was rapidly followed by bending in all the fingers of the right hand. She applied pomades, calming lead plasters, stimulating and antiphlogistic liniments, *et genus omne;* she was physicked with specifics and non-specifics; in fact, she was well quacked. She had the diet cure, the faith cure; she drank mineral waters and employed thermal baths; but all was a tinkling cymbal.

This malady being of obscure etiology, can we not make a diagnosis as to cause by exclusion? She had no gouty process, no rheumatic diathesis. She did not remember ever to have had an inflammation, either acute or chronic, in the palmar aspect of the hand, and it was only after the nutritive processes were much interfered with, and sequently the nervous system, by the "lues venerea" that contraction began to exhibit itself.

Processes to a certain extent may be described, but ultimate causes are sometimes beyond the reach of the subtlest intellect, and, as the problem of palmaris contractura has not been settled, we may reasonably suppose that the specific effects of syphilis may be a factor just as that which has been attributed to gout and rheumatism. I can not divine any other solution. This case is novel: first, in its occurring in a female, which is rare; secondly, that the thumbs were contracted; both Dupuytren and Malgaigne say they never saw contraction of the thumb.

A moderate permanent bending of the fingers of both hands is frequently seen in many old persons, men and women, especially laborers; they are unable to extend the fingers completely.

With advancing age the adipose masses between the linea mensalis and the flexion-furrow, corresponding to the metacarpal articulations of the fingers, disappear regularly,

and contraction of the palmar fascia results; but to these folk it is of little moment, and they plod on to the millenium without asking for relief.

Contraction in these instances may be due to shrinking of the surface of the aponeurosis palmaris; but to make a distinction between this and of the fibers that ascend from it to the integument is subtle and useless. It is evident that even in cases where the "brides" first begin to shrink, the permanent bent state of the hand will be followed by shortening of the palmar fascia itself. But this short and imperfect sketch is not to discuss either the anatomy or surgery of contractura palmaris, though in these aseptic days it is more amenable to surgical methods than was believed by Astley Cooper, Dupuytren, Goyraud, and Malgaigne, who invariably told sufferers that operative proceedings offered no guarantees of success.

My object is merely to bring forward as possible another etiological factor for Dupuytren's finger contraction apart from gout and rheumatism, which have always been considered and doubtless are the fount and origin of the malady with the majority of the unfortunates, about which medical literature has been silent, and also to have an expression from this Society concerning the matter.

Syphilis, which is the most striking illustration of cachexia, was outwardly apparent, and as empiricism has declared that it is useless to treat syphilitic sequelæ without directly treating the syphilis, my therapeutics were tied to hematics and mercurials, with the belief that by curing the anemia she might bear surgical interference for the relief of deformity after the manner of Madelung, of Bonn, with whose operation you may be familiar.

Obituary.

DR. SAMUEL McKEE LETCHER.

By Lyman Beecher Todd, M. D.
Lexington, Ky.

Dr. Samuel McKee Letcher, for years an active, useful and honored member of this Society, was born in Lexington, Ky., on the 10th day of September, 1841, and closed his earthly career at Richmond, Ky., where he was successfully practicing his profession, on the 4th day of October, 1891.

The physicians of Lexington, where he began his professional career, paid the following tribute to his memory:

The physicians of Lexington and Fayette County held a meeting at the office of Dr. J. W. Whitney, yesterday, for the purpose of taking action upon the death of their professional brother, Dr. Sam Letcher. The following committee was appointed to draft suitable resolutions: Drs. Lyman B. Todd, H. M. Skillman, W. A. Brock, J. L. Stockdell, B. L. Coleman, and R. C. Falconer.

The Committee reported the following, which was unanimously adopted:

The occasion but seldom occurs when the members of a medical profession of a city assemble to pay a tribute of respectful regard to one who was not an actual resident associate at the time of his death. But it seems peculiarly proper, indeed doubly appropriate, in reference to our late brother, Dr. Samuel M. Letcher, since his honored father was for more

than thirty years a capable and useful practitioner of medicine of Lexington, where the son (who bore his name) was born on the 10th day of September, 1841, spent his early life and manhood, and where he first opened an office and began to practice, and where he told the writer, when last he saw him, he designed soon to return to live.

This profession, to which he seemed fitted by natural gifts and acquirements, seems to have come to him almost as a matter of inheritance as well as a choice. His father was one of five brothers who were all physicians, and who, in different parts of Kentucky, command the highest esteem and confidence of their fellow citizens, of whom only one survives, Dr. Joseph Perkins Letcher, an octogenarian, who now passes quietly and comfortably the evening of an eventful and useful professional life with his family at Lancaster, Ky.

Dr. Letcher's death on yesterday at Richmond, where for a few years he has lived, was caused by an accident received a month ago. It put a sad, a tragic and untimely end to a career which at the outset gave promise of brightness and usefulness, and brought sorrow to many friends.

His early life and manhood, as said, were spent here. He was educated at the Literary Department of Transylvania University. Chiefly under training and guidance of his maternal grandfather, the late distinguished and learned Chief Justice George Robertson, Dr. Letcher acquired and cultivated a taste for reading, principally standard and poetical works. He fortunately possessed a retentive memory, together with a pleasant manner and social disposition, which made him an interesting conversationalist and an agreeable companion.

Dr. Letcher was graduated from the Kentucky School of Medicine at Louisville, March 15, 1875; he was a member of the Kentucky State Medical Society, and of that association he was for a number of years the faithful and efficient Recording Secretary.

With this expression of sorrow at the death of Dr. Letcher and tribute to his memory, the medical profession of Lexington desire hereby to tender sincere sympathy and condolence to his family, and wish a copy of the foregoing to be sent to them by the secretary of this meeting, also to the medical

journals of the State, and that the papers of Richmond and Lexington be requested to copy them, and that as a further evidence of our respect we attend his funeral.

M. T. SCOTT, *Secretary.* J. W. WHITNEY, *Chairman.*

The sketch of Dr. Letcher's life would be incomplete without reference to his military career, which was phenomenally successful as it was brilliant and heroic. He entered the service as a private; his promotions were rapid, and on more than one occasion for bravery and efficiency he was promoted upon the field of battle.

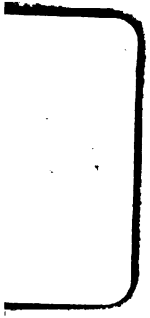
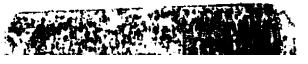
The following extracts from his commissions and reports from commanding officers to the War Department will be read by the friends of Dr. Letcher with interest and admiration, forming as it does an important and brilliant chapter in the biographical history of the War of the Rebellion.

Samuel McKee Letcher enlisted in Captain James Dudley's Company E, Twenty-first Regiment Infantry Volunteers of the State of Kentucky, at the age of nineteen, at Lexington, Ky., on the 21st day of October, 1861. In the spring of 1862 his regiment marched from Lebanon, Ky., being a portion of General G. H. Thomas' corps, to Logan's Cross-roads (or Mill Springs, Ky.), where the battle with General Zollicoffer's forces took place. General Thomas' staff not being sufficient, he was detailed as aid. On the battle-field General Thomas asks for his promotion as a second lieutenant in the following language:

I have the honor to recommend to the Secretary of War Samuel McKee Letcher, of the Twenty-first Kentucky Volunteers, for Second Lieutenant in the U. S. Army for meritorious conduct. He was near me the whole day, and conducted himself with great courage, coolness, and bravery.

After this promotions came rapidly. He was appointed Captain of the same regiment on June 15, 1862; Major,

November 1, 1863; Lieutenant Colonel, March 20, 1864, and Colonel, March 20, 1865.

President Andrew Johnson requested the United States Senate to confirm his appointment as colonel, for energetic, faithful and meritorious services in the Army of the Ohio and Department of North Carolina. He also took an active part in the battles before Nashville, in the siege of Knoxville, Lookout Mountain, Missionary Ridge, and Shiloh; marched with General Buell's army from Corinth, Miss., to Kentucky; was in the battle of Perryville. From there he marched back to Tennessee, was appointed commissary of muster for the Army of the Ohio, and made the march with Sherman's army to the sea, and at the close of the war mustered out Sherman's army in North Carolina and Southern Virginia.

This gallant and honored soldier in his private life was as gentle, amiable and loving as a woman, and unfaltering in his friendship.